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SIXTEENTH BIENNIAL REPORT

OF THE

STATE BOARD OF HEALTH

OF

CALIFORNIA,

FOR THE

FISCAL YEARS FROM JUNE 30, 1898, TO JUNE 30, 1900.



SACRAMENTO:

A. J. JOHNSTON, : : : : SUPERINTENDENT STATE PRINTING,
1901.



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1901.

MEMBERS OF THE BOARD.

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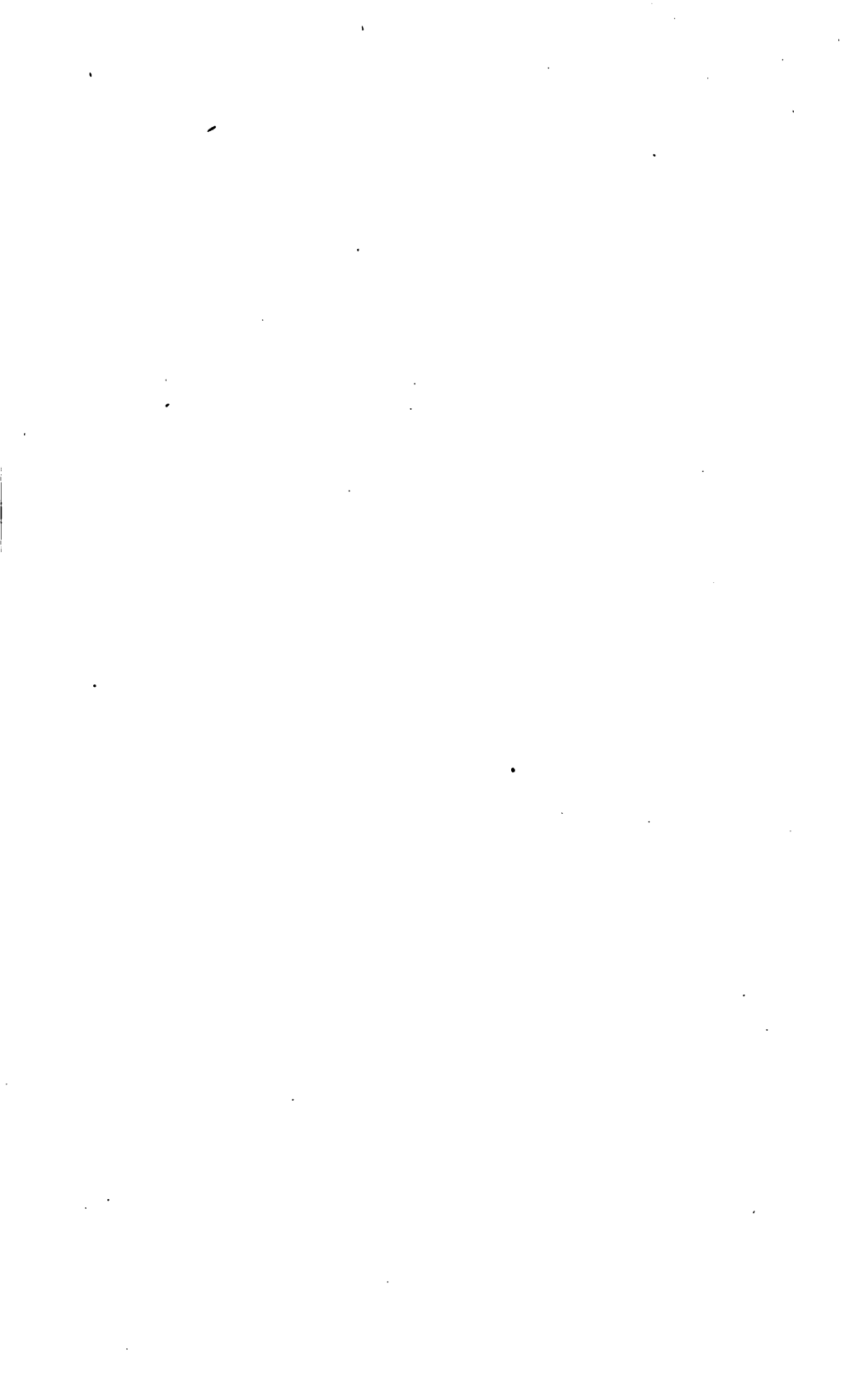
OFFICE CALIFORNIA STATE BOARD OF HEALTH,
SACRAMENTO, September 15, 1900.

To His Excellency HENRY T. GAGE, Governor of California:

SIR: In compliance with the laws of the State it becomes my duty to transmit to you the Sixteenth Biennial Report of the State Board of Health for the fiscal years ending, respectively June 30, 1899, and June 30, 1900. Inviting your attention to the same, I have the honor to be, very respectfully,

Your obedient servant,

W. P. MATHEWS,
Secretary State Board of Health.



REPORT OF THE BOARD.

To His Excellency HENRY T. GAGE, Governor of California:

SIR: The Sixteenth Biennial Report of the State Board of Health is, in obedience to law, hereby submitted to you.

It is a subject of congratulation that the State is unusually free from contagious diseases at this time, and, moreover, that the morbidity as well as the mortality have been lower during the last year than during previous years, as will be seen by consulting and comparing the monthly reports of this Board.

SMALLPOX.

While it is true that smallpox obtained a considerable foothold in certain portions of the State during the summer of 1900, the disease was of a mild type and, compared to the number of cases, the fatality was insignificant. Your attention having been called to the fact that we had reason to believe the origin of the disease was in adjacent States and Territories, we received your authorization to incur all necessary expense to prevent further invasion. The borders of the State, where railroads enter, have been carefully watched, and this with other precautions resulted in quickly eliminating the disease from our midst. The presence of smallpox here has had the one good effect of causing a very general vaccination, and thus removing for a time, at least, any danger of an epidemic.

LOCAL BOARDS OF HEALTH.

The State Board of Health is constantly called upon by local boards of health and by local health officers for vaccine virus, for diphtheria anti-toxine, for pecuniary aid in maintaining quarantine, and for many other things to enable them to contend with contagious diseases that develop in their respective communities. As a rule we are unable to comply with these demands, because, in the first place, of the inadequacy of the appropriation at our disposal, and, second, because the law under which we exist does not contemplate giving this Board jurisdiction over matters purely local. In view of the fact that local health boards and local health officers are too often hampered by inefficient local legislation, and, furthermore, the local authorities having in many communities wholly neglected to appoint any health officers whatever, we urgently recommend that the sanitary laws of the State be revised,

enlarged, and improved, and made to fulfill the requirements of sanitary progress. As a step in this direction we suggest the advisability of giving our successors in office a much larger appropriation and of conferring authority upon the State Board of Health to appoint local boards of health and local health officers when the governing body of any community has failed to do so. Responsibility for the sanitary condition of their respective districts should remain, as now, with the local authorities, but if this Board had authority to exercise coördinate power with them in preventing the spread of infectious diseases, especially along the borders of counties and the borders of other States, the effect would be beneficial to the public health.

VITAL STATISTICS.

This Board has vainly endeavored to secure full reports of deaths and of the prevailing diseases in the various sanitary districts of the State. Blank forms have been repeatedly sent out to the health officers and others to make these reports on, but in many instances our requests continue to be ignored. The responsibility for this neglect of duty rests upon physicians who fail to report to health officers, and upon the latter who might by insistence secure these reports and forward them to our Secretary. We respectfully urge that some legislation be had looking to better results in this important branch of the public service.

SCHOOL HYGIENE.

Health officers cannot render their constituencies a more important service than by insisting upon all school-houses being provided with modern sanitary appliances. The more prominent among these are thorough ventilation, perfect drainage, and properly adjusted light. In addition, the plan of making regular medical inspection of the pupils attending the public schools, now enforced in many of the larger cities of the East, might well be put in practice in our most populous communities. The duties of these inspectors should be to visit the schools daily in the morning, and to examine all pupils who complain, or appear to the teacher to be ill. As a result of this kind of inspection it may be stated that in a large Eastern city of the United States, out of about 16,000 pupils examined within a period of fourteen months, more than 10,000 were found to be ill, and of these 77 had diphtheria, 28 scarlet fever, 116 measles, 28 chickenpox, 69 pediculosis, 47 scabies, 47 mumps, 33 whooping-cough, and 8 congenital syphilis. The remainder were suffering from a variety of other diseases and many of them were found to be too ill to remain in school during the day.

VACCINATION.

Although evidence of the efficacy of vaccination as a preventive of smallpox is to be had on every hand, there still remains, in almost every

community, a few congenital idiots who raise their feeble objections to this safe and wholesome operation. But even these have grown fewer under the practice of using bovine, to the exclusion of humanized, virus. Nevertheless, the law requiring all children to be vaccinated before entering the public schools is not strictly enforced. This non-compliance is due, however, to neglect and carelessness rather than to any objection to the law. If a penalty were attached to the law by which State school moneys could be withheld from districts that have failed to enforce the legal provisions requiring vaccination, we think the effect contemplated by the statute would be obtained and the danger of smallpox in the State reduced to a minimum.

By order of this Board the inmates of all State institutions have been vaccinated.

STATE LABORATORY.

An Act approved March 9, 1885, authorized the Governor of California to appoint one of the professors of the State University, of sufficient skill and experience, as State Analyst, whose duty it shall be to analyze all articles of food, drugs, medicines, mineral waters, etc., used within this State, when submitted to him by the State Board of Health. The purpose of this law is wise, but it has been found to be inoperative, chiefly because of the omission to convey with it a sufficient appropriation. In our judgment the time has come when the State should have a laboratory of its own, distinct from any other department of the government, and exclusively under the control of the State health authorities. The scientific advancement in all matters appertaining to sanitation demands such an institution, and we deem it unnecessary to enter into an extended argument to enforce our views on the subject. We content ourselves, therefore, with recommending as of the highest importance the establishing of a State laboratory, where authoritative analytical and bacteriological investigations can be made and important questions relating to the public health officially determined.

QUARANTINE.

It would appear that the State of California has no jurisdiction over her seaports so far as quarantine regulations are concerned. The United States Marine Hospital Service has assumed exclusive control, and neither the State nor any local health authorities are considered in dealing with vital questions which arise there concerning the public health. In our judgment this state of affairs should not be allowed to continue. An appropriation sufficient for the purpose should be made to purchase land and erect buildings suitable for a quarantine station, and the State Board of Health duly authorized to take charge of and

conduct the same. Thereafter, should an infectious or contagious disease enter this State through its waterways, some one acting for the State could be held responsible, which cannot now be justly done.

Very respectfully,

R. W. HILL, M.D., President.
W. P. MATHEWS, M.D., Secretary.
C. A. RUGGLES, M.D.
C. W. NUTTING, M.D.
D. D. CROWLEY, M.D.
WINSLOW ANDERSON, M.D.
W. J. HANNA, M.D.

REPORT OF THE SECRETARY.

To the State Board of Health:

GENTLEMEN: Owing to the limited amount of money at our disposal for the publication of this biennial report, it has been found necessary to omit much material that has heretofore been given a place in the compilation of similar reports. The monthly circulars of the Secretary have been condensed into a table which it is thought will sufficiently show the mortality of the State. It has also been deemed sufficient to include only those portions of the minutes as bear more particularly upon our duties, which consist largely in visiting the public institutions and examining into their sanitary condition. Among the public buildings and grounds which have received our careful attention are the State prisons, State hospitals, reform schools, and normal schools.

SAN QUENTIN.

The site for this prison, resting as it does upon a hill overlooking the bay of San Francisco, was wisely chosen with reference to sanitary advantages. The buildings are somewhat antiquated when considered for the purposes for which they were erected. The best results from administrative care for the health of the inmates is seen there nevertheless. No epidemics have prevailed, and sickness and deaths among the prisoners are at a minimum. Many beneficial improvements of a sanitary nature have been made by the present Warden, and I take pleasure in recording your approval of his management.

It was the opinion of the members of our Board who last visited San Quentin Prison that the exercising grounds for the prisoners were inadequate, and the attention of the Prison Directors is called to that fact. The kitchen, cells, yards, and the premises generally are kept in a good and wholesome condition.

FOLSOM.

Folsom Prison has long been regarded as one of the model institutions of the State, and under the present management is keeping up its reputation. Frequent visits of the members of this Board have failed to find there, with one exception, any grounds to criticise adversely the sanitary condition of the place. All that has been said in commendation of San Quentin, the parent institution, may be justly said of

Folsom Prison. The exception above mentioned is the practice of using the American River, which flows by the walls of the prison, as a receptacle for the sewage output. While this vicious use of a waterway of the State does not, of course, affect injuriously the sanitary condition of the prison, the pollution of the stream becomes a menace to other inhabitants of the State. For this reason the State Board of Health has frequently and persistently registered its condemnation of this method of sewage disposal. It is gratifying to be able, at last, to say that this evil is in process of abatement. A contract has recently been entered upon by the State Prison Directors and the State Board of Examiners, of which the Governor is chairman, by which the sewage will be scientifically cared for and the river left free to pursue its course untainted to the sea.

STOCKTON STATE HOSPITAL.

This institution was badly located on the start, and to keep it in good sanitary condition continues to tax the resources of the management. Those who selected this site wholly ignored, as others have done since, the chief requisites to locating a public building to be inhabited by wards of the State. These requisites are: An abundant supply of pure water and good drainage. In consequence of the absence of these requirements the State has been put to unnecessary expense, and the difficulties and responsibilities of those charged with the duties of conducting the institution greatly enhanced. The latest visit of members of this Board to Stockton State Hospital—Drs. Ruggles, Crowley, Anderson, and Mathews being present—resulted in a careful inspection of the grounds, buildings, wards, kitchen, etc. The general health of the inmates was found to be good, a condition largely due to the constant watchful care of Dr. Clark, the Superintendent, and his able staff of assistants. Generally speaking, the sanitary condition of the institution is good.

NAPA STATE HOSPITAL.

Among the few public buildings advantageously located for the purpose for which it was intended, Napa State Hospital is one of them. A committee of your Board, consisting of Drs. Ruggles and Mathews, has visited this important institution and carefully inspected its every department. The wards, kitchen, dining-rooms, and bakery are kept in a condition to be highly approved. Proper care is exercised in procuring, preparing, and supplying the food for the patients, and no neglect is observable anywhere. Many suggestions heretofore made by the State Board of Health, with a view to bettering the sanitary condition of the Hospital, have been adopted, and the good results are perceptible.

AGNEWS STATE HOSPITAL.

Members of the State Board of Health have from time to time visited Agnews State Hospital and given it careful inspection. Advantageously situated, it promises to become, if not the first, a close second in importance among the magnificent hospitals erected by our State for the care of the insane. Whatever has been said in commendation of the wise and efficient conduct of other similar institutions, may be said with equal truth of this one. Under the present Board of Trustees harmony prevails throughout the establishment, and all those in charge of its destinies are actuated by one purpose, viz: to make Agnews a model—an example for other institutions to follow. Through his strenuous devotion to duty, Dr. Crane, the superintendent, is entitled to much of the credit for the vastly improved condition of this hospital. He omits no effort to better the condition of the patients in his charge, and the good results are perceptible on every hand. It seems needless to say that the sanitary condition of this institution is as favorable as the utmost care and vigilance can make it.

SOUTHERN CALIFORNIA STATE HOSPITAL.

If, in locating this hospital, the chief object was to furnish the inmates with good oranges, then the site was wisely chosen, for no better oranges are grown anywhere in the State. But if the locators sought a suitable place for the care and custody of the insane, then their efforts were a dismal failure. Too hot in summer and too dry in winter, are the climatic conditions prevailing there. Nature has done nothing for the place as a sanitarium or hospital, and, therefore, the efforts of man to make it suitable have been excessive and costly. However, one cannot but admire the success here of constant endeavor. Notwithstanding the adverse surroundings; this hospital maintains a prominent place among the well-conducted and successful institutions of the State. Before it was opened, and since then, Dr. M. B. Campbell has been the superintendent in charge. At this hospital the sewage is disposed of on the plan of sewage farming, and the system gives entire satisfaction. This plan is recommended to other institutions, where the conditions are favorable.

MENDOCINO STATE HOSPITAL.

This is the most recent State Hospital established for the care of the insane. The general plans of construction are an improvement upon those formerly in vogue. The question of disposal of the sewage, however, has occasioned much anxiety and is not yet solved. Every member of the State Board of Health who has visited the place, and the Board as a body, has condemned the present system by which sewage finds its way to the Russian River, an important stream that flows near by. To

remedy this nuisance the State should purchase an additional piece of ground and use it as a sewage farm, as is done at the Southern California State Hospital. Visiting members of our Board have invariably found the sanitary condition of the Mendocino State Hospital to be good. The wards, kitchen, dining-room, and other departments are well kept, and have met with your approval.

HOME FOR FEEBLE-MINDED CHILDREN.

The sympathies of our people are more strongly enlisted in behalf of the inmates of this institution than for those of any other whatsoever. It gives us especial pleasure, therefore, to be able to state that our visits there have always resulted in finding the laws of sanitation strictly observed. Everything is done that can be done to preserve the health and promote the comfort of these poor children. The State has been liberal to a degree in the expenditure for grounds and buildings and in providing means for maintenance, but the capacity of the Home has been exceeded and there is a great demand for more room. We renew the recommendation of our predecessors that detached cottages for consumptive children be erected.

NORMAL SCHOOLS.

The Normal School buildings have received your attention. Inasmuch as the pupils who attend these institutions do not reside on the premises, the question of sanitation is not so vital as it is in the cases of the State Prisons and the State Hospitals. Nevertheless, due regard is had to keeping the buildings clean and in a wholesome condition. In some instances, the management have to contend with difficulties due to poor construction of the buildings, such as insufficiency of ventilation and badly arranged lighting. Upon the whole, however, we are able to say that hygienic laws are observed in these institutions and their sanitary conditions up to our requirements.

In this connection we feel called upon to make special mention of the State Normal School at San Diego. In the erection of this building more attention has been given to modern sanitary requirements than in any other public building in the State. The structure is so planned that each class-room, recitation-room, and office is equipped with two separate air shafts; the library and assembly-rooms, being larger, have four such shafts. Arrangements have been made to draw in fresh outside air, and, by means of fans operated by electric motors, force it through apertures near the ceiling into the rooms. At, or near, the floor there are other apertures through which the vitiated air is constantly forced out by the incoming fresh air. In passing into the building, the air goes through closed passages in which are fastened moist cloths that act as filters, removing all dust and impurities. When necessary, the

air is heated by being passed over heaters located in the basement. In the toilet-rooms the air is drawn downward through the closets and urinals by means of a hot-air shaft, with which they are exclusively connected. The system is a perfect success, and absolutely prevents the escape of gases or odors into the toilet-rooms. The urinals and closets are supplied with automatic flushing tanks, which may be adjusted to flush as often as necessary.

REFORM SCHOOLS.

In the discharge of our duties, the reform schools, situated at Whittier in Los Angeles County, and at Ione in Amador County, have not been omitted from observation. The Ione School is well situated for easy application of the laws of health, and we record our approval of its present condition.

The Whittier School, on the other hand, was unfortunately located, and many difficulties have had to be overcome to meet the requirements of sanitation. The method of disposing of the sewage has been improved, but is not yet what it should be, and it is hoped that further progress will soon be made in that direction. It is a pleasure, however, to say that the interiors of these buildings, especially in the girls' department, show a high order of government and attention to the requirements of hygiene. This gratifying state of affairs is due largely to the constant care and vigilance of Mrs. Adina Mitchell, one of the Trustees.

DEAF, DUMB, AND BLIND ASYLUM.

The Deaf, Dumb, and Blind Asylum at Berkeley has had frequent visits from members of the State Board of Health. Every care requisite for the preservation of the health of the inmates is applied in this institution. The class-rooms, dormitories, lavatories, and all places frequented by the children, show a high observance of sanitary precaution. At no time has our scrutiny revealed any laxity or indifference to the prime necessity of good order and cleanliness. This asylum is conducted on a high plane of efficiency, especially noticeable along the lines requiring our attention, and is entitled to the commendation herein bestowed.

Respectfully submitted.

W. P. MATHEWS,
Secretary.

STATEMENT OF THE EXPENDITURES OF THE STATE BOARD OF HEALTH

For the Fifty-first Fiscal Year, ending June 30, 1900.

CR.

By amount appropriated..... \$1,500 00

DR.—To Warrants.

No.	Date.	In Whose Favor Drawn.	Amount.
	1899.		
896	Aug. 8	State Board of Health.....	\$120 00
1112	15	" " " ".....	8 50
1113	15	" " " ".....	15 15
1114	15	" " " ".....	24 40
2148	Sept. 13	" " " ".....	73 60
2149	13	" " " ".....	12 90
2290	23	" " " ".....	41 75
3126	Oct. 13	" " " ".....	80 10
3233	23	" " " ".....	106 80
3234	23	" " " ".....	90 45
3235	23	" " " ".....	86 30
3236	23	" " " ".....	12 40
3960	Nov. 11	" " " ".....	62 10
4028	18	" " " ".....	21 10
4029	18	" " " ".....	19 75
4030	18	" " " ".....	27 00
4844	Dec. 8	" " " ".....	90 75
4845	8	" " " ".....	23 56
	1900.		
5592	Jan. 2	" " " ".....	21 30
6016	13	" " " ".....	15 50
6017	13	" " " ".....	12 50
6226	26	" " " ".....	61 60
6293	30	" " " ".....	17 50
7891	Feb. 21	" " " ".....	32 50
8390	Mar. 2	" " " ".....	31 30
8727	10	" " " ".....	20 20
9015	29	" " " ".....	17 55
9613	April 12	" " " ".....	14 55
9773	25	" " " ".....	48 25
9774	25	" " " ".....	19 15
10139	May 1	" " " ".....	18 30
10631	15	" " " ".....	12 80
10708	19	" " " ".....	31 50
10854	28	" " " ".....	18 75
11167	31	" " " ".....	77 50
438	July 20	" " " ".....	33 75
1098	Aug. 2	" " " ".....	15 00
2055	Sept. 4	" " " ".....	5 64
5061	Dec. 14	" " " ".....	45 70
		To balance.....	12 85
			\$1,500 00

MONTHLY CIRCULARS OF THE STATE BOARD OF HEALTH.

JULY, 1899.

Reports from 14 cities, towns, villages, and sanitary districts, aggregating a population of 550,898, show a mortality of 810—a death-rate of 1.47 per thousand for July, or 17.64 per thousand per annum.

There were 136 from consumption, 18 from pneumonia, 19 from bronchitis, 5 from congestion of the lungs, 3 from diarrhoea, 5 from cholera infantum, 34 from other diseases of the stomach and bowels, 9 from diphtheria, 3 from scarlatina, 2 from whooping-cough, 18 from typhoid fever, 5 from cancer, 58 from heart diseases, 15 from alcoholism, and 479 from all other causes.

In the above mortuary record it is to be noted that more than 16 per cent of the deaths were caused by consumption. The general health of the State is good. No epidemics are reported, and contagious and infectious diseases are unusually circumscribed.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during July, 1899.

Cities and Towns.	Estimated Population	Total Deaths.	Consumption	Acute Pneumonia	Acute Bronchitis	Congestion of the Lungs	Diarrhoea and Dysentery	Cholera Infantum	Other Diseases of St'mach & Bow'ls	Diphtheria	Croup	Scarlatina	Measles	Smallpox	Whooping-Cough	Typho-Malarial Fevers	Typhoid Fever	Remittent and Intermittent Fevers	Cerebro-Spinal Fever	Cancer	Erysipelas	Heart Diseases	Alcoholism	Other Causes
Eureka and vicinity	10,000	7	2	1	10	2	1	1	2	1							2		2					4
Los Angeles	122,000	27	1	1	1	1			5	2													3	60
National City	1,200	2																					1	1
Oakland	75,000	56	5	1						2			1						3				40	6
Pomona and vicinity	7,500	10	4																					2
Pleasanton	1,000	2																						2
Sacramento	30,000	38	6	3																				26
San Bernardino	10,000	13	1												1					1				11
San Francisco	380,000	518	85	13	9	2	2	2	24	5		3	7	5	1		16		5			44	12	283
Santa Barbara	6,700	2																						2
Santa Cruz	5,594	9																				3		6
Santa Rosa	10,000	7	1							1			1									1		5
Stockton	25,000	17	4	1					2	1										1				8
Vallejo	5,904	7	2						1					1								1		
Totals	550,898	810	136	18	19	5	3	5	34	9		3	9	6	2		18		10	5		58	15	453

AUGUST, 1899.

Reports from 22 cities, towns, villages, and sanitary districts, aggregating a population of 698,400, show a mortality of 834—a death-rate of 1.19 per thousand for August, or 14.28 per thousand per annum.

There were 105 deaths from consumption, 27 from pneumonia, 13 from bronchitis, 7 from congestion of the lungs, 7 from diarrhoea, 7 from cholera infantum, 50 from other diseases of the stomach and bowels, 9 from diphtheria, 2 from croup, 3 from scarlatina, 1 from measles, 3 from whooping-cough, 5 from typho-malarial fever, 11 from cerebro-spinal fever, 13 from cancer, 2 from erysipelas, 63 from heart diseases, and 9 from alcoholism.

Reports from various sanitary districts, outside of larger cities and towns, show the absence of any form of epidemic, and a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during August, 1899.

Cities and Towns.	Estimated Population	Total Deaths	Consumption	Acute Pneumonia	Acute Bronchitis	Congestion of the Lungs	Diarrhoea and Dysentery	Cholera Infantum	Other Diseases of St'mach & Bow'ls	Diphtheria	Croup	Scarlatina	Measles	Smallpox	Whooping-Cough	Typho-Malarial Fevers	Typhoid Fever	Remittent and Intermittent Fevers	Cerebro-Spinal Fever	Cancer	Erysipelas	Heart Diseases	Alcoholism	Other Causes
Anaheim and vicinity	5,000	3																		1	1			1
Colton and vicinity	2,500	2																			1	1		1
Chico and vicinity	7,500	3	1																			1		1
Etna Mills	1,000	2																				1		1
Eureka and vicinity	10,000	3	2							2												7		3
Fresno	12,000	12	15		2			3							1		4			4			1	3
Los Angeles	103,000	92	15																					44
Marysville	4,000	7	1																	1				2
Monterey	1,200	1																						
Napa	4,500	1	1							1	2													
Oakland	75,000	80	9		2																			
Pleasanton	1,000	1																						
Redlands and vicinity	3,500	10	2																					
Sacramento	30,000	23	4		1																			
San Bernardino	10,000	4																						
San Francisco	380,000	512	64	16	7	7	4	3	33	5		3	1		1	4	10		2	1	1	37	6	309
San Luis Obispo	6,000	2																						
Santa Barbara	6,700	8	2																					
Santa Cruz	5,594	7	1																					
Santa Rosa	10,000	13	1																					
Stockton	25,000	17	1		1																			
Vallejo	5,904	8	1																					
Totals	698,400	834	105	27	13	7	7	7	50	9	2	3	1		3	5	15	11	1	13	2	63		9

SEPTEMBER, 1899.

Reports from 28 cities, towns, villages, and sanitary districts, aggregating a population of 704,900, show a mortality of 857—a death-rate of 1.21 per thousand for September, or 14.52 per thousand per annum.

There were 136 deaths from consumption, 23 from pneumonia, 8 from bronchitis, 4 from congestion of the lungs, 12 from diarrhoea, 13 from peritonitis, 14 from typhoid fever, 1 from typho-malarial fever, 8 from typho-malarial fever, 8 from cerebro-spinal fever, 8 from cancer, 71 from heart diseases, and 17 from alcoholism.

Reports from various sanitary districts, outside of larger cities and towns, show the absence of any form of epidemic, and a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during September, 1899.

Cities and Towns.	Other Causes.....	2	6	1	5	6	1	51	4	4	4	41	6	2	16	4	2	5
Anaheim and vicinity.....	Alcoholism.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bakersfield and vicinity.....	Heart Diseases.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cedarville.....	Erysipelas.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Colton and vicinity.....	Cancer.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chico and vicinity.....	Cerebro-Spinal Fever.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Downville and vicinity.....	Remittent and Intermittent Fevers.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eureka and vicinity.....	Typhoid Fever.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fresno.....	Typho-Malarial Fevers.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Livermore.....	Whooping-Cough.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Los Angeles.....	Smallpox.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Marysville.....	Measles.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Napa.....	Scarlatina.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Needles and vicinity.....	Croup.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Oakland.....	Diphtheria.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pomona and vicinity.....	Other Diseases of St'mach & Bow'ls.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pleasanton.....	Cholera Infantum.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Redlands and vicinity.....	Diarrhoea and Dysentery.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sacramento.....	Congestion of the Lungs.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
San Bernardino.....	Acute Bronchitis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
San Francisco.....	Acute Pneumonia.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
San Luis Obispo.....	Consumption.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Barbara.....	Total Deaths.....	3	8	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Cruz.....	Estimated Population.....	5,000	2,000	200	2,500	7,500	1,000	10,000	12,000	3,000	103,000	4,000	4,500	750	7,500	1,000	3,500	30,000

ABSTRACT FOR SEPTEMBER, 1899—Continued.

Cities and Towns.		Other Causes	Alcoholism	Heart Diseases	Erysipelas	Cancer	Cerebro - Spinal Fever	Remittent and Intermittent Fevers	Typhoid Fever.....	Typho- Malarial Fevers.....	Whooping-Cough..	Smallpox	Measles	Scarlatina.....	Croup	Diphtheria.....	Other Diseases of St'mach & Bow'ls	Cholera Infantum	Diarrhoea and Dysentery	Congestion of the Lungs	Acute Bronchitis	Acute Pneumonia	Consumption	Total Deaths.....	Estimated Population
Santa Rosa.....	10,000	2	--	--	--	--	1	--	--	--	--	--	--	--	--	1	2	--	--	--	--	--	1	8	10,000
Stockton.....	25,000	7	--	3	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	2	14	25,000
Valejo.....	5,904	6	1	1	--	--	--	--	--	--	--	--	--	--	--	--	1	1	--	--	--	--	--	10	5,904
Totals	704,900	171	17	71	--	8	7	2	17	3	2	--	1	1	--	10	46	13	12	4	8	28	136	857	704,900

OCTOBER, 1899.

Reports from 26 cities, towns, villages, and sanitary districts, aggregating a population of 715,200, show a mortality of 917—a death-rate of 1.28 per thousand per annum for October, or 15.36 per thousand per annum.

There were 104 deaths from consumption, 45 from pneumonia, 9 from bronchitis, 18 from diarrhoea, 10 from cholera infantum, 56 from other diseases of the stomach and bowels, 15 from diphtheria, 2 from croup, 3 from scarlatina, 1 from measles, 1 from smallpox, 2 from whooping-cough, 1 from typhoid fever, 10 from cerebro-spinal fever, 10 from cancer, 79 from heart diseases, and 9 from alcoholism.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during October, 1899.

Cities and Towns.	Deaths.		Population.	
	1890.	1900.	1890.	1900.
Alameda	11,900	18	11,900	6
Anshelm and vicinity	2,500	2	2,500	1
Azusa and vicinity	2,000	3	2,000	1
Other Causes
Alcoholism
Heart Diseases	1	.....	.....
Erysipelas
Cancer	3	.....	.....
Cerebro - Spinal Fever
Remittent and Intermittent Fevers
Typhoid Fever	1	.....	.....
Typho - Malarial Fevers
Whooping-Cough
Smallpox
Measles
Scarlatina
Croup
Diphtheria
Other Diseases of St'mach & Bow'ls	3	.....	.....
Cholera Infantum
Diarrhoea and Dysentery
Congestion of the Lungs
Acute Bronchitis
Acute Pneumonia	1	.....	.....
Consumption	3	.....	.....
Total Deaths	18	.....	.....
Estimated Population

[illegible]

NOVEMBER, 1899.

Reports from 27 cities, towns, villages, and sanitary districts, aggregating a population of 723,600, show a mortality of 995—a death-rate of 1.37 per thousand for November, 1936, or 16.44 per thousand per annum.

There were 142 deaths from consumption, 54 from pneumonia, 13 from bronchitis, 5 from congestion of the lungs, 12 from diarrhea, 4 from cholera infantum, 45 from other diseases of the stomach and bowels, 15 from diptheria, 6 from scarlatina, 5 from whooping-cough, 3 from typho-malarial fever, 40 from cerebro-spinal fever, 8 from cancer, 2 from erysipelas, 82 from heart diseases, and 16 from alcoholism.

The San Francisco report includes 17 deaths at U. S. Marine Hospital and U. S. Reservation, Presidio.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during November, 1899.

Cities and Towns.	Estimated Popula- tion	Total Deaths	Consumption	Acute Pneumonia	Acute Bronchitis	Congestion of the Lungs	Diarrhoea and Dys- entery	Cholera Infantum	Other Diseases of St'mach & Bow'ls	Diphtheria	Croup	Scarlatina	Measles	Smallpox	Whooping-Cough	Typho- Malarial Fever.	Typhoid Fever	Remittent and Inter- mittent Fevers	Cerebro - Spinal Fever	Cancer	Erysipelas	Heart Diseases	Alcoholism	Other Causes
Anaheim	5,000	2	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	3
Azusa and vicinity	2,000	5	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15
Bakersfield and vicinity	9,000	19	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Colton and vicinity	2,500	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Chico and vicinity	7,500	6	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
Etna Mills	1,000	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Eureka and vicinity	10,000	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fresno	12,000	21	5	2	—	—	—	—	3	3	—	—	—	—	—	—	2	—	—	—	—	—	—	3
Highland	1,800	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Los Angeles	103,000	127	18	9	1	—	1	—	4	5	—	—	—	—	—	—	8	—	—	4	—	—	—	1
Marysville	4,000	7	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	66
Napa	4,500	8	—	—	—	1	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	4
Needles and vicinity	1,500	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Oakland	75,000	83	14	1	—	1	—	—	7	1	—	—	—	—	—	—	—	—	—	—	—	—	—	47
Pomona and vicinity	7,500	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
Pleasanton	1,000	3	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Redlands and vicinity	3,500	9	3	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Redlands	30,000	34	7	2	—	1	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	17
Sacramento	10,000	6	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
San Bernardino	10,000	6	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
San Francisco	390,000	557	75	30	9	1	6	1	29	4	2	2	—	—	—	18	—	—	—	3	—	—	—	315
San Luis Obispo	6,000	17	3	1	—	1	1	1	—	—	—	—	—	—	1	—	2	—	—	—	—	—	—	7
Santa Barbara	6,700	8	3	2	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Santa Cruz	5,694	13	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6
Santa Monica	1,500	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Santa Rosa	10,000	8	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Stockton	25,000	25	5	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11
Vallejo	8,000	14	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10
Totals	723,600	995	142	54	13	5	12	4	45	15	7	3	—	—	6	2	33	—	10	8	2	82	5	527

DECEMBER, 1899.

Reports from 29 cities, towns, villages, and sanitary districts, aggregating a population of 721,585, show a mortality of 1,023—a death-rate of 1.42 per thousand for December, 1899, or 17.04 per thousand per annum.

There were 163 deaths from consumption, 60 from pneumonia, 19 from bronchitis, 6 from congestion of the lungs, 11 from diarrhoea, 2 from cholera infantum. Fifty-seven from other diseases of the stomach and bowels, 17 from diphtheria, 3 from croup, 1 from scarlatina, 1 from measles, 11 from whooping-cough, 24 from typhoid fever, 6 from remittent and intermittent fevers, 16 from cerebro-spinal fever, 16 from cancer, 96 from heart diseases, and 17 from alcoholism.

The San Francisco report includes 14 deaths at U. S. Marine Hospital and U. S. Reservation at Presidio.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during December, 1899.

[illegible]

Cities and Towns.

ABSTRACT FOR DECEMBER, 1899—Continued.

Cities and Towns.	Estimated Population.	Total Deaths															
		Consumption	Acute Pneumonia.	Acute Bronchitis..	Congestion of the Lungs	Diarrhoea and Dysentery	Cholera Infantum	Other Diseases of St'mach & Bow'ls	Diphtheria	Croup	Scarlatina	Measles.....	Smallpox.....	Whooping-Cough	Typho-Malarial Fevers	Typhoid Fever	Remittent and Intermittent Fevers
San Rafael.....	3,891	1	21	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Barbara.....	6,700	11	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Cruz.....	5,594	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Monica.....	3,000	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Rosa.....	10,000	20	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stockton.....	25,000	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
St. Helena and vicinity	2,800	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vallejo.....	8,500	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	721,535	1,029	163	60	19	11	2	57	17	3	1	1	1	1	1	17	534

JANUARY, 1900.

Reports from 29 cities, towns, villages, and sanitary districts, aggregating a population of 727,089, show a mortality of 1,125—a death-rate of 1.56 per thousand for January, 1900, or 17.40 per thousand per annum.

There were 223 deaths from consumption, 76 from pneumonia, 25 from bronchitis, 3 from congestion of the lungs, 11 from diarrhoea, 1 from cholera infantum, 43 from other diseases of the stomach and bowels, 22 from diphtheria, 2 from croup, 5 from scarlatina, 2 from measles, 3 from whooping-cough, 1 from typho-malarial fever, 20 from typhoid fever, 8 from cerebro-spinal fever, 49 from cancer, 3 from erysipelas, 113 from heart diseases, 13 from alcoholism.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during January, 1900.

Cities and Towns.	Estimated Population	Total Deaths	Consumption	Acute Pneumonia	Acute Bronchitis	Congestion of the Lungs	Diarrhoea and Dysentery	Cholera Infantum	Other Diseases of St'mach & Bow'ls	Diphtheria	Croup	Scarlatina	Measles	Smallpox	Whooping-Cough	Typho-Malarial Fevers	Typhoid Fever	Remittent and Intermittent Fevers	Cerebro-Spinal Fever	Cancer	Erysipelas	Heart Diseases	Alcoholism	Other Causes
Alameda	11,900	18	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8
Anaheim and vicinity	5,000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Colton and vicinity	2,500	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chico and vicinity	7,500	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Downey and vicinity	2,500	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Etna Mills	1,000	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eureka and vicinity	10,000	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fresno	12,000	19	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Grass Valley and vicinity	7,000	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Highland	2,000	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Long Beach and vicinity	2,600	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Los Angeles	103,000	162	45	7	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Marysville	4,000	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
National City	1,200	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Oakland	75,000	81	14	8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pomona and vicinity	7,500	11	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pleasanton	1,000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Redlands and vicinity	3,500	6	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sacramento	30,000	32	10	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
San Bernardino	10,000	6	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
San Francisco	360,000	685	123	41	15	3	8	1	28	14	2	4	1	1	2	13	1	1	1	1	1	1	1	1
San Luis Obispo	6,000	10	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
San Rafael	3,881	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Barbara	6,700	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Cruz	5,594	8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Monica	3,000	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stockton	25,000	18	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
St. Helena and vicinity	2,800	8	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vallejo	5,904	11	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals	727,089	1,125	223	76	25	3	11	1	43	22	2	6	2	2	3	1	20	8	49	3	113	13	559	559

Santa Monica	3,500	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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MARCH, 1900.

Reports from 28 cities, towns, villages, and sanitary districts, aggregating a population of 729,495, show a mortality of 1,041—a death-rate of 1.42 per thousand for March, 1900, or 17.04 per thousand per annum.

There were 187 deaths from consumption, 114 from pneumonia, 27 from bronchitis, 12 from congestion of the lungs 4 from diarrhoea and dysentery, 27 from other diseases of the stomach and bowels, 11 from diphtheria, 1 from scarlatina, 1 from whooping-cough, 1 from malarial fever, 19 from typhoid fever, 12 from cerebro-spinal fever, 46 from cancer, 5 from erysipelas, 64 from various diseases, 10 from alcoholism.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during March, 1900.

[illegible]

ABSTRACT FOR MARCH, 1900—Continued.

Cities and Towns.	Estimated Popula- tion.....	Total Deaths	Consumption	Acute Pneumonia.	Acute Bronchitis..	Congestion of the Lungs	Diarrhoea and Dys- entery	Cholera Infantum	Other Diseases of St'mach & Bow'ls	Diphtheria	Croup	Scarlatina	Measles.....	Smallpox.....	Whooping-Cough	Typho-Malarial Fever	Typhoid Fever	Remittent and Inter- mittent Fevers	Cerebro-Spinal Fever	Cancer	Erysipelas	Heart Diseases	Alcoholism.....	Other Causes.....	
																								500	
Oakland	75,000	89	11	8	5	1	—	—	—	—	—	—	—	—	—	—	—	—	2	5	—	—	—	46	
Pomona and vicinity	7,500	10	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	6	
Redlands and vicinity	3,500	8	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	
Sacramento	30,000	32	7	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18	
San Bernardino	10,000	9	3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	
San Francisco	360,000	581	110	76	18	9	4	—	22	8	—	1	—	—	—	—	—	—	1	34	—	—	—	248	
San Luis Obispo	6,000	10	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	
San Rafael	3,891	6	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	
Santa Barbara	6,700	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	
Santa Clara	2,887	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	
Santa Cruz	10,000	7	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	
Santa Rosa	10,000	10	2	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	
Santa Monica	3,500	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	
Stockton	25,000	12	2	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	4	
St. Helena	2,800	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
St. Helena and vicinity	5,904	12	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	
Vallejo	5,904	12	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	
Totals.....	729,495	1,041	187	114	27	12	4	—	27	11	—	1	—	—	1	1	19	—	12	46	—	5	64	10	500

APRIL, 1900.

Reports from 26 cities, towns, villages, and sanitary districts, aggregating a population of 716,681, show a mortality of 988—a death-rate of 1.39 per thousand for April, 1900, or 16.68 per thousand per annum.

There were 167 deaths from consumption, 63 from pneumonia, 30 from bronchitis, 9 from congestion of the lungs, 9 from diarrhoea and dysentery, 6 from cholera infantum, 6 from other diseases of the stomach and bowels, 12 from diphtheria, 1 from croup, 2 from scarlatina, 2 from measles, 3 from whooping-cough, 20 from typhoid fever, 9 from cerebro-spinal fever, 44 from cancer, 1 from erysipelas, 79 from heart diseases, 9 from alcoholism.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during April, 1900.

Cities and Towns.	Estimated Population.	Other Causes.....													Totals
		12	1	1	1	1	9	6	75	8	1	39	5	2	
Alameda.....	11,900	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Anahelm and vicinity.....	5,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Azusa and vicinity.....	4,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Colton and vicinity.....	2,500	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Chico and vicinity.....	7,500	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Downey and vicinity.....	2,500	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Eureka and vicinity.....	10,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Fresno.....	12,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Highlands.....	1,800	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Los Angeles.....	103,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Marysville.....	4,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
McCloud.....	600	1	1	1	1	1	1	1	1	1	1	1	1	1	9
National City.....	1,200	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Oakland.....	75,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Pomona and vicinity.....	7,500	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Redlands and vicinity.....	3,500	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Sacramento.....	30,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
San Bernardino.....	10,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
San Francisco.....	360,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
San Luis Obispo.....	6,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Santa Barbara.....	6,700	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Santa Clara.....	2,387	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Santa Cruz.....	5,584	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Santa Rosa.....	10,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Stockton.....	25,000	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Vallejo.....	8,500	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Totals.....	716,681	998	167	63	30	9	9	9	6	6	12	1	2	2	536

MAY, 1900.

Reports from 26 cities, towns, villages, and sanitary districts, aggregating a population of 728,395, show a mortality of 961—a death-rate of 1.18 per thousand for May, 1900, or 14.16 per thousand per annum.

There were 161 deaths from consumption, 83 from pneumonia, 18 from bronchitis, 3 from congestion of the lungs, 5 from diarrhoea and dysentery, 46 from other diseases of the stomach and bowels, 10 from diphtheria, 1 from croup, 3 from scarlatina, 2 from measles, 9 from whooping-cough, 1 from typhoid fever, 16 from typhoid fever, 43 from cerebro-spinal fever, 43 from cancer, 2 from erysipelas, 90 from heart diseases, 15 from alcoholism.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during May, 1900.

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JUNE, 1900.

Reports from 26 cities, towns, villages, and sanitary districts, aggregating a population of 704,341, show a mortality of 908—a death-rate of 1.28 per thousand for June, 1900, or 15.36 per thousand per annum.

There were 154 deaths from consumption, 56 from pneumonia, 13 from bronchitis, 6 from congestion of the lungs, 5 from diarrhoea and dysentery, 8 from cholera infantum, 44 from other diseases of the stomach and bowels, 7 from diphtheria, 1 from croup, 4 from scarlatina, 4 from measles, 2 from smallpox, 7 from whooping-cough, 1 from typho-malarial fever, 17 from typhoid fever, 7 from cerebro-spinal fever, 36 from cancer, 1 from erysipelas, 92 from heart diseases, 11 from alcoholism.

reports from sanitary districts, outside of larger cities and towns, show a generally favorable condition of the public health.

Abstract of the Reports of Deaths and their Causes in the following Cities and Towns of California during June, 1900.

Cities and Towns.	Estimated Population.	Total Deaths.	Consumption.	Acute Pneumonia.	Acute Bronchitis.	Congestion of the Lungs.	Diarrhoea and Dysentery.	Cholera Infantum.	Other Diseases of St'mach & Bow'ls.	Diphtheria.	Croup.	Scarlatina.	Measles.	Smallpox.	Whooping-Cough.	Typho-Malarial Fevers.	Typhoid Fever.	Remittent and Intermittent Fevers.	Cerebro-Spinal Fever.	Cancer.	Erysipelas.	Heart Diseases.	Alcoholism.	Other Causes.
Alameda	16,000	22	3	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	6	--	12
Amador County	880	14	2	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	8
Anaheim and vicinity	5,000	3	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2
Azusa and vicinity	4,000	6	1	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	2
Chico and vicinity	7,500	4	--	1	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2
Downey and vicinity	2,500	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	3
Eureka and vicinity	10,000	14	1	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1
Eureka	1,200	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12
Lincoln	1,200	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1
Los Angeles.	103,000	151	27	12	--	--	--	3	--	--	--	--	2	--	--	--	6	--	--	3	1	11	1	84
McCloud	600	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2
National City	1,200	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1
Oakland	75,000	64	4	5	1	--	--	1	--	--	--	3	--	--	--	--	--	--	--	--	1	8	--	2
Pomona and vicinity	7,500	11	4	1	--	--	--	--	--	--	--	--	--	--	--	--	2	--	--	--	1	--	--	3
Pleasanton	1,000	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piedlands and vicinity	3,500	6	4	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	1

ABSTRACT FOR JUNE, 1900—Continued.

Cities and Towns.	Estimated Popula- tion														Total Deaths	Other Causes
Sacramento	30,000	3	4	1	1	1	1	1	1	1	1	1	1	1	1	12
San Bernardino	10,000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6
San Francisco	360,000	507	91	28	4	4	4	4	4	4	4	4	4	4	4	7 208
San Luis Obispo	6,000	13	4	1	1	1	1	1	1	1	1	1	1	1	1	7
San Rafael	3,891	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Barbara	6,700	11	2	1	1	1	1	1	1	1	1	1	1	1	1	5
Santa Monica	3,500	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Santa Rosa	10,000	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Stockton	25,000	15	3	2	1	1	1	1	1	1	1	1	1	1	1	9
Wheatland	700	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yuba County	700	15	2	1	1	1	1	1	1	1	1	1	1	1	1	11
Totals	704,341	908	154	56	13	6	6	8	44	7	1	4	4	2	7	11 432

DEATHS FROM COMMUNICABLE DISEASES,

As per Monthly Reports, made by the Secretary of the State Board of Health, for the
Fifty-first Fiscal Year.

1899-1900.	Scarlatina	Diphtheria	Measles	Whooping- Cough	Typhoid	Tuberculosis..	Total, includ- ing Tuber- culosis	All Other Causes	Grand Total..	Population Reporting ..
July	3	9	9	2	18	136	177	633	810	550,898
August	3	9	1	3	15	105	136	698	834	698,400
September ..	1	10	1	2	17	136	167	690	857	704,900
October	3	15	1	2	17	164	202	715	917	715,200
November	3	15	0	6	33	142	199	796	995	723,600
December	1	17	1	1	24	163	207	822	1,029	721,585
January	5	22	2	3	20	223	275	850	1,125	727,089
February	1	13	0	4	20	213	251	853	1,104	732,598
March	1	11	0	1	19	187	219	822	1,041	729,495
April	2	12	2	3	20	157	196	802	998	716,681
May	3	10	2	9	16	161	201	760	961	728,395
June	4	7	4	7	17	154	193	715	908	704,341
Total	30	150	23	43	236	1,941	2,423	9,156	11,579	8,453,182
Rate per 1,000 per annum..	.0427	.21355	.03265	.061	.335	2.755			16.44	

Average population reporting, 704,432, or 47% of total population.

THE EFFECT OF THE USE OF INTOXICATING LIQUOR AS A BEVERAGE.

[The law creating the State Board of Health directs that an inquiry be made as to "the effect of the use of intoxicating liquor as a beverage upon the industry, prosperity, happiness, health, and lives of the citizens of the State." Complying with this duty, we submit data bearing more directly upon the effect of alcohol upon the health and lives of our population.]

Alcohol figures prominently as a cause in the death-list in California. Of all the deaths occurring in this State, one half to one per cent are assigned directly to alcoholism by physicians signing the death certificates. It certainly is moderate to allow that in as many more cases the cause of death is a condition brought about directly by the use of alcohol, and that in as many more cases the power of resistance of the system is so greatly weakened by the use of alcohol that germs of disease prove fatal which under normal conditions would not do so.

Alcohol is assigned as a cause for some one or more diseased conditions of almost every organ and tissue of the body. The direct cause of insanity in approximately 10 per cent of the insane committed to the California Hospitals in the year 1897-98 was given in the commitment paper as alcoholism. Undoubtedly, the same cause figured indirectly in as many more cases. Alcoholism is a prominent causative factor in almost every nervous disease. Apoplexy, paralysis, encephalitis, meningitis, neuritis, hysteria, neurasthenia, neuralgia, and chorea are some of the nervous diseases originating and aggravated by the use of alcohol. The stomach suffers from indigestion, ulceration, carcinoma, and dilatation in consequence of excessive use of alcohol. The liver, heart, and kidneys suffer from fatty degeneration, fibroid encroachment, and numerous other diseased conditions in consequence of excessive use of alcohol. Alcohol is the prominent cause of diseased conditions of the arterial walls and the fatal sequelæ of atheroma. In all acute diseases the death-rate is much larger among alcoholics than among patients not addicted to alcohol.

Alcoholism is certainly a subject which should be given careful study by every sanitarian. It is true that the great majority of those whose health is impaired by its use are themselves at fault, for which reason we cannot consider the subject one of such urgent importance from a purely sanitary standpoint as the protection of water-supplies against infection by typhoid, or the quarantine of our borders and ports against smallpox, yellow fever, and cholera, or the isolation of diphtheria, scarlet fever and other infectious diseases, as to neglect such safeguards would expose all persons to dread disease over which the individual has no control.

Our laws provide for instruction to be given in our public schools in reference to the effects of alcohol on the human system. Sanitary boards should interest themselves in the execution of this law, and should instruct the teachers so that they may be able wisely to impart such knowledge to the scholars. Our attention in this direction must be given toward educating the youth that they may not fall innocent victims to the disease. The subject is so complicated by moral and political considerations that it is certain to remain an unsettled problem for years to come. In the meantime it is important to admonish all municipal health departments to guard their vital statistics and to collect all information possible on the subject that we may judge intelligently of what might be accomplished by preventive legislation.

Dr. E. W. King, Superintendent of the Mendocino State Hospital, in an able special report to the Commission in Lunacy as to the causes and prevalence of insanity in California, says :

"The proportion of people in civilized countries who use alcohol in some form is very large; the number who use it to excess is not so large. By excess, we mean its use in sufficient quantities and with sufficient frequency to produce some of its physical effects upon the tissues—not necessarily, however, drunkenness.

"E. D. Fisher, Professor of Mental and Nervous Diseases in the Medical Department of the University of the City of New York, says: 'The peripheral nerves, and especially the nerve endings, are peculiarly susceptible to the poison of alcohol; the brain and cord are also involved. In chronic conditions we find chronic inflammation of the membranes of the brain; the pia is frequently clouded or thickened and there is œdema of the convex surface of the brain, with effusion of fluid into the subarachnoid space, and into the ventricles, causing flattening of the convolutions. The vessels are the seat of atheromatous changes; the ganglionic cells in the cortex show degeneration, their processes being lost. The association fibers also are degenerated. Chronic alcoholic insanity is probably due to the secondary effect of alcohol on the vessels, leading to arterial degeneration and consequent organic changes in the brain structure. It tends toward dementia. Epileptic seizures may occur during the excessive use of alcohol, and the epileptic condition may become permanent. Children of alcoholic parents are especially liable to idiopathic epilepsy.'

"Bartholow says in his *Materia Medica and Therapeutics*, page 511, tenth edition: 'As respects the action of alcohol upon the nervous system, its first effect is to increase the functional activity of the brain; the ideas flow more easily, the senses are more acute, the muscular movements are more active; with the increased action of the alcohol on the cerebrum, the excitement becomes more disorderly, the ideas incoherent and rambling, the muscular movements uncontrolled and in-

coördinate (overstimulation of the cells of the gray matter). With an excessive quantity, the functions of the cerebrum are suspended, and complete unconsciousness ensues; the reflex movements cease; the functions of organic life are performed feebly, and by an extension of the toxic influence to the centers presiding over these movements, respiration and circulation are arrested. Alcohol has been discovered in the fluid contained in the ventricles, and has been distilled from the cerebral matter; and Hammond has demonstrated that it has a special affinity for nervous matter, being found in the cerebro-spinal axis and in the nerves in greater quantities than in other tissues of the body. As a result of the direct contact chiefly, but in part also from the variations in the ultra cranial blood current, important structural alterations are wrought in the cerebral matter; the cells of the gray matter become more or less fatty and shrunken; the neuroglia undergoes hyperplasia; shrinking and condensation of the whole cerebrum ensue (sclerosis), and the cerebro-spinal fluid relatively increases. The objective evidence of these changes is seen in the impaired mental powers, the muscular trembling, the shambling gait of the drunkard.'

"Oppenheim, in his second edition of *Diseases of the Nervous System*, page 960, says: 'Chronic alcoholism has an important influence upon the central nervous system, and also upon the peripheral nerves. In many ways the functions of the brain are injured by its use; irritability, apathy, indolence, weakness of the will, of the memory, loss of intelligence and particularly of the ethical sense, belong to the common disturbances of the psychical functions; often there is complete loss of intelligence.'

"Epilepsy is frequently a result of alcoholism.

"Krafft-Ebing, in his work on insanity, sixth edition, page 190, says: 'The excessive use of alcohol holds the first place in its deleterious effects upon the central nervous system; it has become the curse of the people, Volksplage, which not only brings impoverishment to the individual and to the whole people, but also severely injures the moral, intellectual, and physical prosperity of the same. The inclination to drink is increased by habit, and the continued use of alcohol contributes to its hereditary transmission to the offspring. The action of alcohol upon the central nervous system is deleterious in various ways; partly by direct chemical action producing changes in the tissue, and partly by its paralytic action on the vaso-motor nerves. There is dilatation of the arterioles and atheromatous degeneration, which lead to apoplexy. Many of the children of drunkards are idiotic, or suffer from mental weakness, or they have a neuropathic constitution and die during the first months of life. Many suffer from epilepsy, hysteria, insanity, and the severest forms of mental degeneration are developed.'

"Nissl was able to prove by experiments upon rabbits, which had been given a large amount of alcohol daily, that a considerable number of

the cells of the cortex of the brain were destroyed. The nucleus became smaller, and lost its rounded form; its nucleolus, and finally also the cell membrane, gradually but entirely disappear.

"Kraepelin, in his work on insanity, sixth edition, says of the effects of chronic alcoholism on nervous tissue: 'The large pyramidal and motor cells of the anterior central convolution of the brain were more or less destroyed; here and there were changes in the nucleus of the cells, and a number of these cells appear to undergo degeneration. The causative action of alcohol for the production of insanity rests principally upon its poisonous action upon the cortex of the brain.'

"The long-continued use of alcohol produces severe and profound changes in the various organs and tissues of the body, resulting in serious derangements in their functions. The functions of the stomach are deranged because of a catarrhal condition of its lining membrane; there is an increased growth of the connective tissue of the liver, producing enlargement at first, but finally, by its contraction, the liver becomes smaller, the glandular liver cells are destroyed, and we have the well-known condition of cirrhosis or hobnail liver. The same cause produces hypertrophy and fatty degeneration of the heart, of the kidneys, and changes in the intima of the blood vessels. In these changes in the glandular organs and in the organs of circulation are to be found the reasons for the profound changes in the composition of the blood.

"On account of the derangement of the digestive organs by reason of the action of alcohol upon the mucous lining of the stomach, the blood is not supplied with sufficient properly prepared food, from which can be elaborated healthy blood, and because of the diseased condition of the heart and arteries, there is defective circulation; neither of the conditions necessary for healthy action is complied with; that is, the composition of the blood is not normal, hence not healthy, and because of the diseased condition of the blood vessels, there cannot be a regular and normal quantity supplied to the organs, and there necessarily follows deranged functions. Because of the loss of its normal food supply in proper quantities and also by the direct chemical action of alcohol upon its tissues, the brain suffers more seriously than any other organ; we might add to the above statement, as to the deleterious action of alcohol upon the various tissues and organs of the body, the testimony of Spitzka, Savage, Regis, Clouston, Gowers, and in fact all who have carefully investigated the subject. They all practically agree upon this fact, that among the extrinsic causes of disease, none acts with more potency, greater frequency, or produces more deleterious results than alcohol.

"In immediate connection with the above statement, is a most unfortunate fact, that the action of alcohol upon the individual who drinks it is not more deleterious than it is upon the offspring.

"Krafft-Ebing says: 'The inclination to drink is increased by habit, and the continuance of its accustomed use contributes to its hereditary transmission in so far that through alcoholic excesses, degenerated parents procreate children who come into the world idiotic, with a neuropathic convulsive constitution and who die early from convulsions, while those who live are subject to epilepsy, hysteria, or insanity. The severest forms of psychic degeneration are developed out of the diseased constitution of the nervous system.'

"Marce gives an example of a drunkard who was the father of sixteen children; fifteen died young—the one that lived had epilepsy.

"Darwin says the families of drinkers die out in the fourth generation.

"Morel gives the degenerative tendency as follows:

"First generation—Ethical degeneration. Alcohol excesses.

"Second generation—Drunkenness. Maniacal attacks. General paralysis.

"Third generation—Hypochondria. Melancholia. Taed Vitæ. Suicide.

"Fourth generation—Imbecility. Idiocy. Extinction of the family.

"Flemming, Ruer, and Demeaux have reported cases that prove the wonderful fact that children of formerly temperate parents, conceived at the time of a drunken debauch, were in a high degree predisposed to insanity, and generally to nervous diseases.

"Kraepelin says: 'The long-continued misuse of alcohol appears to produce an extremely deleterious influence upon the offspring.'

"Domme has thrown some light upon this subject through his observation of two groups of ten families each, for a period of twelve years. In the first group, the parents were drinkers. To this group there were 57 children born; of these there were only 10, or 17.5 per cent, completely normal; the remainder suffered in various ways from degenerative diseases, such as deformity, dwarfs, chorea, epilepsy, idiocy; 25 died during the first months of life.

"To the temperate group, there were 61 children; of these only five died; four suffered later from some disease of the nervous system, two from malformation. The remaining 50, or 81.9 per cent, were and remained completely healthy.

"These experiences show, in the most striking manner, that chronic alcoholic poisoning not only destroys the individual, but also impresses the stamp of degeneration upon the embryo of the coming race.

"Kirchhoff says: 'According to cautious investigators, 30 to 40 per cent of cases of insanity exhibit evidence of hereditary taint. This, when transmitted through several generations, leads to degeneration and extinction of the family. In the first generation we have nervous symptoms; the disappearance of ethical feelings; then follows a generation in which a tendency to excesses appear, and the danger is greatly increased by alcoholism. In the third generation there is perhaps

suicide, or an affective form of insanity, and finally in the fourth generation there appear more profound mental disorders, such as idiocy, and extinction of the family.'

"I have a man under my care, whose father had scrofula when young, and died of tuberculosis; his son (my patient) used alcohol to a considerable extent in early life; married a strong, healthy woman, and one child was the result of this union. The father is now suffering from organic disease of the brain; his child, now two years old, has suffered from birth with hydrocephalus, and cannot yet walk.

"I have another case now under personal observation, of a lady about thirty years old, married and the mother of three children within five years. One of the children died early; two are yet alive, but under eight years old. The mother (my patient) has been suffering for some months with melancholia attonita. Both parents of this patient were drinkers; my patient inherited, in consequence, a weak constitution, predisposed to mental or nervous disease; under the ordinary strain of child-bearing she broke down and will probably in a few months, or possibly years, if she lives, be classed under the head of secondary dementia, and become an addition to the incurables in the State Hospitals.

"Now, what of her offspring? They belong to the third generation, so far as the history of the case discloses; unless they are protected through the influence of a healthy organization of a temperate father, they will, as experience teaches, probably break down under the cares and vexations of an active life, and some form of affective insanity or suicide may end the scene."

QUARANTINING THE STATE AGAINST TUBERCULOSIS.

(Extract from the minutes of the California State Board of Health.)

Dr. D. D. Crowley introduced the following resolution before the California State Board of Health:

Resolved, That the State Board of Health consider the propriety of quarantining against human beings and domestic animals with tuberculosis entering our State.

I offer this resolution because I consider that in certain locations in this State the soil and air are rich in the bacilli of tuberculosis. It is true that as yet our State is sparsely settled, but I believe that we have proportionately more people who die from tuberculosis than any other State in the Union. The question would arise as to the reason for this. You might say that it is brought about by the foreign element—i. e., foreign to our State—migrating to our State to regain health. And while such is indeed a factor, you may not be aware that the native-

born Californian is taking on the disease more than the sanitation of the State should permit.

It is supposed to be a Christian principle to save life, but when we do so at the expense of many others we are killing the many to save the few. Many consumptives enter our State promiscuously, spreading the germ of their own disease, and the climate may save one in fifty or prolong the lives of a few for a month or for a year; yet how many others, from this reason, will die who have not previously been so infected.

Tuberculosis is both a contagious and an infectious disease, and it is a well-known fact that the majority of two different families died who occupied in succession a house which was previously infected by the germ of tuberculosis.

The Boards of Health throughout the State should ask for *ordinances*, to save several in a family from being contaminated by one. I again desire to impress upon my associates that this is no inhuman suggestion. The *temporal* pleasure of a consumptive mother in kissing her babe should be overcome by the greater pleasure of not taking a life. I know of residences in my own city where deaths from tuberculosis have taken place, and where no sanitary precautions have followed to prevent others. *No law exists* which permits health officials to enter these homes and systematically to destroy the deadly germs during the lives of consumptives. Europe is decreasing its mortality most conspicuously. California should do the same. We are morbidly afraid of diphtheria, scarlet fever, smallpox, cholera, and yellow fever. We quarantine these diseases because they kill so quickly, and our people appreciate them, but the lingering tubercular disease that eventually kills twice as many as all these together is permitted to continue unchecked, notwithstanding the efforts of science. Why? Is there any law that will support us in such an endeavor? Is there any law that will permit us to examine consumptive cows and thereafter destroy the same? No. Our children are drinking milk from cows that have tubercular abscess in their livers and lungs as large as the human head, but the dairymen are strong and many of them will not permit a diseased cow to be slaughtered. They would lose a few dollars. A human life is of no consequence.

Our Councils and our Supervisors are too often subsidized by friendship, politics, or the more substantial, to allow them to interest themselves too conspicuously in sanitation to save lives when it might destroy votes.

I ask you to take this matter under your consideration, and to act with strength. We as medical men are superior to politics or other influences that will interfere with duties which we should rigidly enforce.

Now, I ask you, shall we enforce a quarantine, and will the State support us in the act?

THE RELATION OF DRINKING WATER TO DISEASE.

Simple Tests for Contaminated Water.

By WINSLOW ANDERSON, A.M., M.D., M.R.C.P. London, etc.,
Member State Board of Health of California.

The experienced sanitarian is daily becoming more and more concerned about the water-supply of cities and towns, as there no longer remains any doubt in the minds of physicians and scientists that many of the gastro-intestinal diseases may be traced directly to the drinking of impure water. Typhoid fever has been repeatedly proven to be introduced into the human economy through contaminated drinking water. It has been ascertained by the highest authorities that cholera is also a water-borne disease. I am furthermore convinced, after considerable investigation, that the most dreaded of all diseases,—one which causes the death of one seventh of the human race, viz: tuberculosis,—may also be carried into the system in drinking water. We know that tuberculous cows give milk rich in bacilli. This milk given to infants and weakly adults has produced tuberculosis of the bowels. If diseased milk can infect a person, why not disease-laden water? The germs of consumption are floating about in the air in many localities from pulverized dried sputum. Many of these bacilli must settle in exposed drinking water. These remarks would be especially applicable to surface water, rain water collected from roofs of houses, and surface wells and cisterns. The more impure the water the better is the medium for cultivation or multiplication of the germs. This subject is certainly well worth careful investigation. For these and various other reasons a pure water-supply is of paramount importance to the public health. Every person requires at least 30 gallons of water per diem for all purposes. Domestic animals, such as the dog, require 3 gallons; the cow, 10 gallons; and the horse, 16 gallons per day.

It is advisable, as well as desirable, that all educated people should know how to examine ordinary drinking water for impurities. With this object in view the following simple tests are published:

1. PURE WATER

Should be: (a) Neutral in reaction; (b) Transparent; (c) Colorless; (d) Odorless; (e) Tasteless; (f) And should leave no residue on evaporation.

(a) *Reaction*.—Good drinking water should not give any reaction with acid (red) nor alkaline (blue) litmus paper.

(b) *Transparency*, and (c) *Color*.—Test: Fill a 6-inch test cylinder with the suspected water, and place it upon a white sheet of paper. Fill

a similar glass with distilled water for comparison. Look through the water from the top. Any turbidity or want of transparency in the suspected water should be sufficient cause to have it condemned for drinking purposes, unless it be filtered and boiled.

(d) *Odor*.—Drinking water should be absolutely odorless. Test: Fill a 500 c.c. (about a pint) Florence flask with the water under examination. Heat it gently up to 43.3° C. (110° F.) or 48.6° C. (120° F.). If any odor develops, the water should be condemned, as it will generally be found to contain organic impurities.

(e) *Taste*.—Sewage, organic pollution, and the salts of iron, sodium, sulphur, etc., may be detected by the taste.

(f) *Residue (Organic)*.—Drinking water should never contain any organic matter, as this generally means pollution. Test: Heat the residue in a platinum dish. If it is dissipated by heat or becomes charred, the water is unfit for use. (See also 2, below.)

Residue (Inorganic).—Pure water contains no residue. Good drinking water, however, generally contains from 6 to 30 parts of solids per 100,000. Test: Evaporate over a water bath 70 c.c. (2½ oz.) of the suspected water in a previously weighed platinum dish. The weight of the residue represents the total solids in each gallon of water. On dividing this by .7, the number of parts per 100,000 is obtained.

2. DETERMINATION OF ORGANIC MATTER.

As previously stated, drinking water should not contain any organic matter.

Test: To 250 c.c. (about 8 oz.) of the water under examination add 5 c.c. (75 drops) of dilute sulphuric acid (10 per cent) and enough permanganate of potassium solution (.395 gramme to the liter) to tinge the water a rose pink. Apply heat up to 60° C. (140° F.), and allow it to stand for a few minutes. If the pink tinge disappears, it is due to the oxidation of the permanganate of potassium, and organic matter is almost certainly present. Such water should be condemned.

3. CHLORIDES.

Chlorine finds its way into drinking water from three sources, viz: (a) Sewage (urine) contamination; (b) Salt deposits; (c) Seepage from sea water.

Tests: (a) Chlorine may be detected: (1) By its odor; (2) By turning brown, paper dipped in a solution of potassium iodide; (3) By bleaching a solution of indigo or litmus.

(b) Chlorides are easily found by throwing down a flocculent white precipitate of silver chloride with the silver nitrate solution. The precipitate is readily soluble in ammonium hydrate, but insoluble in nitric acid.

The amount of chlorides in each gallon of water is estimated by a volumetric solution of nitrate of silver. Drinking water containing chlorides should be boiled, for fear of its being contaminated by sewage.

4. NITRITES AND NITRATES.

Whenever drinking water contains either of these salts, it is almost certainly polluted with sewage or organic matter, and should be condemned.

Test: Take 1 c.c. (16 drops) of the water to be examined in a test-tube. Add to this 2 c.c. (32 drops) of dilute (10 per cent) sulphuric acid and one drop of pyrogallol (.65 gm. to 30 c.c. of water). If nitrites or nitrates are present the water will turn an amethyst or wine color.

Tests for Nitrites.—1. They give red fumes when treated with strong sulphuric acid.

2. They give an instantaneous blue color with potassium iodide and starch paste, on the addition of a few drops of dilute (10 per cent) sulphuric acid.

3. They give a dark brown color with ferrous sulphate.

4. Potassium dichromate in solution is converted into a green liquid by the addition of a nitrite and an acid.

Tests for Nitrates.—1. When heated with sulphuric acid, they evolve pungent fumes of nitric acid.

2. When heated with a solution of ferrous sulphate and a few drops of sulphuric acid a black coloration is produced.

3. Evaporate 4 c.c. (64 drops) of the suspected water to dryness and add a few drops of phenyl-sulphuric acid (1 part of carbolic acid, 4 parts of strong sulphuric acid, and 2 parts of water); if nitrates are present a reddish color of nitro-phenal is produced.

Tests for Phosphates.—When phosphates are present in water one may be almost certain that we have to deal with sewage pollution.

1. Phosphates are precipitated by chloride of iron, yielding a yellowish-white ferric phosphate.

2. Barium chloride gives a white precipitate of barium phosphate, which is soluble in acids.

3. Silver nitrate solution produces a yellow precipitate soluble in ammonia and acids.

4. Ammonia molybdate solution in dilute nitric acid and applying heat in the presence of phosphates or phosphoric acid gives a yellow precipitate soluble in ammonia.

5. AMMONIA AND ALBUMINOID SUBSTANCES.

Tests for Ammonia.—To 100 c.c. ($3\frac{1}{2}$ oz.) of water add 5 c.c. (80 drops) of potassium hydrate solution and 1 c.c. (16 drops) of sodium carbonate

solution to precipitate the earthy salts. Then add 1 c.c. (16 drops) of Nessler's reagent. If ammonia is present the water assumes a yellowish tinge and should be avoided, as it is contaminated with sewage or organic matter.

(*Nessler's Reagent*: 35 gms. of potassium iodide in 100 c.c. of water; 17 gms. of mercuric chloride in 300 c.c. of water; sodium hydrate (20 per cent) 600 c.c. to make 1 liter.)

Tests for Albuminoid Substances.—In testing for these substances one of the most reliable methods is to use 1 gm. of tannic acid in 3 c.c. of water and 1 c.c. of alcohol. Of this solution use 10 c.c. in 200 c.c. of the suspected water. If the water is free from albuminoid contamination, it should remain clear for several hours. If it becomes colored within half an hour, the water is unfit for use.

6. MINERAL POISONS.

The most important of these are zinc, arsenic, lead, and copper. Drinking water may be poisoned with one or all of these by being kept or stored in leaden pipes, copper or zinc reservoirs. Much water is rich in CO_2 , and the alkaline salts (calcium, sodium, etc.) will act on the lead, zinc, or copper, forming soluble salts of these metals. Commercial zinc nearly always contains arsenic, so that great care should be taken in using stored water. In drawing water from the faucets in the morning always let it run for some minutes to clear the pipes of the stagnant and poisonous water, as plumbers will insist on using leaden pipes and joints.

Tests for Zinc.—(a) Zinc may be detected by adding a few drops of ammonium sulphide, with like quantities of ammonium chloride and ammonium hydrate to a test-tube half filled with the contaminated water. If present a white precipitate of zinc sulphide is produced, which is insoluble in acetic acid, but freely soluble in dilute hydrochloric acid.

(b) Zinc gives a white gelatinous precipitate of zinc hydrate with potassium hydrate solution.

Tests for Arsenic.—(a) Arsenic is readily discovered by acidulating half a test-tube full of water with a few drops of hydrochloric acid, and allowing sulphureted hydrogen gas to pass into it. Should arsenic be present a yellow precipitate of sulphide of arsenic is produced, which is soluble in ammonium sulphide but insoluble in hydrochloric acid.

(b) Arsenical water will produce arsenureted hydrogen gas by boiling it with potassium hydrate and a piece of pure zinc. This gas blackens paper moistened with nitrate of silver.

(c) Reisch's test: Arsenical water acidulated with hydrochloric acid and boiled with a piece of bright copper will deposit a gray film of arsenic on the copper.

(d) Marsh's test: Generate hydrogen by the ordinary method of pure zinc and dilute sulphuric acid. To this add the arsenical water. Ignite the gas and apply to the flame a porcelain dish, upon which a black metallic mirror of arsenic is deposited.

Tests for Lead.—Lead forms a white precipitate of plumbic chloride with hydrochloric acid.

(a) By adding sulphureted hydrogen gas a black precipitate of plumbic sulphide is produced, which is insoluble in ammonium sulphide.

(b) Lead forms a white precipitate of plumbic sulphate with dilute sulphuric acid.

(c) Lead gives a yellow precipitate of plumbic iodide with potassium iodide, which is soluble in boiling water.

Tests for Copper.—(a) Copper gives a brownish precipitate of sulphide of copper with sulphureted hydrogen in an acidulated solution.

(b) It forms a pale-blue precipitate with ammonium hydrate, soluble in excess of either.

(c) In an acid solution copper gives a chocolate-brown precipitate with potassium ferro-cyanide.

To detect these mineral poisons in water it often becomes necessary to reduce, by boiling, a gallon or more of the suspected water to an ounce in order to concentrate the mineral salts.

Microscopic, biologic, and bacteriologic examinations of water should always be made whenever there are chemical indications of impurities present, as pathogenic germs such as typhoid bacilli may be proven present.

Should water become contaminated by the excreta from cholera or typhoid fever patients, it will respond to the tests for organic matter and to those for nitrites and nitrates and the albuminoid compounds. Microscopic and bacteriologic investigation will differentiate between the micro-organisms.

Mineral water usually contains chlorides, carbonates, sulphates, etc., of sodium, magnesium, calcium, etc., and as such are of considerable therapeutic value; but should ordinary drinking water from rivers, wells, and water-systems contain any of the foregoing impurities, it must be looked upon with suspicion, *and had better be boiled for half an hour before it is used for drinking purposes.*

Boiling will destroy organic impurities and the germs of disease, but it will not destroy the mineral poisons above named; hence, it becomes a matter of importance to have the water tanks and pipes made of iron, to avoid all lead, zinc, and copper contamination.

RECENT EPIDEMIC OF SMALLPOX.

By DR. W. J. HANNA.

Paper read before the Sacramento Society for Medical Improvement.

During the past year there have occurred in several of the Eastern States epidemics of a mild type of smallpox. The disease, from a diagnostic standpoint, was variously regarded by physicians, by men of science, by editors of daily newspapers, and by the victims of the disease; chickenpox, impetigo contagiosa, Cuban itch, Manila or doby itch, and smallpox were the terms applied. The diagnosis of chickenpox was perhaps the most common error made by physicians wherever the disease occurred. Next to chickenpox, impetigo contagiosa was the most common error.

It is said the disease was transmitted into the Southern States from Cuba, where it prevailed during the Spanish-Cuban War. From the South the disease spread to very many Northern States, and in every case it was so mild that the early cases were not recognized, and the affected persons were permitted to roam about at pleasure.

The first appearance of the present epidemic of smallpox in California was in February of the present year. A railroad conductor presented himself to Dr. Shoemaker of Truckee, who immediately recognized the disease and placed the patient in quarantine. His family, consisting of a wife, baby, and sister-in-law, were immediately vaccinated. The wife and sister-in-law, who had been vaccinated some four years previous, escaped the disease, but the baby, some two weeks later, was affected with a mild attack of variola. The patient supposed he contracted the disease in Ogden, Utah.

The next appearance was at Marysville. A cigarmaker who came from San Francisco developed a skin eruption. A few papules appeared on his face, which he says lasted about four days. He was not sick and did not see a doctor. A fellow workman in the cigar factory was taken ill with a papular eruption in a very mild form and was diagnosed chickenpox. Sixteen days after this his father, brother, and one sister were taken ill and developed well-marked cases of smallpox. Two young ladies who visited the above family were also affected. The cases were a mild type of variola, well defined. The houses were kept under most rigid quarantine as soon as the disease was recognized, and so far there have been twelve cases in Marysville, with no deaths. Five of the above cases had been vaccinated.

The disease next made its appearance at Rio Vista, and I am informed by Dr. Makemson that they have had twelve cases. One case, hemorrhagic, which proved fatal, vaccinated over twenty years ago;

two cases of confluent, very severe, never vaccinated; one case of confluent, vaccinated twenty years ago, and four cases of an ordinary type, and one case of varioloid, vaccinated within the past five years. In two of the families, each had a child about two years old; both mothers had smallpox, but the children were at once vaccinated and escaped the disease, although they were most thoroughly exposed.

Its next appearance was at Jackson, Amador County, and I am informed by Dr. Endicott that they have had in all about one hundred and fifty cases in about fifty quarantined houses. In only one case was death due directly to smallpox. Almost all the cases have been up and able to go about as soon as the eruption appeared. Two or three cases were abortive, all the symptoms being present, except there would be no eruption. In some cases the prodromal symptoms continued for seven or eight days before the eruption appeared. Some had no fever, and almost all had no secondary fever. A few cases had only from six to a dozen pustules. Only two cases required nursing. The first few families did not consult a physician. The doctor recalls only one case of the entire one hundred and fifty who had been previously vaccinated. Owing to the first lot of virus being poor, he did not have a good opportunity to study the effects of recent vaccination, except in a few cases where it exerted a beneficial influence. Very little pitting has been observed. While it has been a very mild form of smallpox, it proved to be very contagious. In one case of a nursing child two months of age, who had the disease in a mild form, the mother, who had been previously vaccinated, did not contract the disease; all the other members of the family had smallpox in a mild form.

Two cases of smallpox have been reported at Sacramento, two cases at Bakersfield, and one at Chico. A case was reported at Auburn, Placer County, last week, who came from Green River, Wyoming. It was stated that there were several cases in that town.

Major John Van R. Hoff, of the United States Army, in his report to the Surgeon-General, states that the most important sanitary work thus far undertaken by the Medical Department at Porto Rico was the vaccination of the whole population. Upon his arrival he found that smallpox was endemic, a condition common to Spanish-American countries, and resolved to endeavor to eradicate the disease. As a result, an order was issued from the Department that the inhabitants of the island must be protected from smallpox. Every resident who had not had the disease was to be vaccinated, and hereafter all infants must be vaccinated before reaching the age of six months. A sufficient corps of surgeons was appointed as directors of vaccination. A vaccine station was organized, the cattle being furnished for vaccinifers by patriotic citizens of Porto Rico. The total number of vaccinations reported was 786,290; cost, \$28,536.17; the cost of vaccinating one person, \$0.0234. The cost

of this somewhat unique undertaking was about equally divided between the United States and the Island, the former providing the personnel for the supervision of the work and a large share of those engaged in producing vaccine virus, together with all the materials and much of the transportation, while the latter contributed to the production of virus and its actual introduction into the arms of the population. The work was not accomplished without encountering difficulties and opposition, but they were not too great to be overcome, and the result justifies the undertaking. Between December 15, 1898, and February 11, 1899, 554 cases of smallpox were reported in sixteen different towns and villages. The disease existed in every direction, and was a constant menace to the people and to the material interests of the Island. In order to complete the work and continue it through the future, a vaccine station will be established under the auspices of the Superior Board of Health, and compulsory vaccination will continue to be enforced.

It is understood that the occurrence of smallpox among the troops in the Philippines gave rise in England, where the protective influence of vaccination was under discussion at the time, to the claim that as vaccination was compulsory in the United States Army and carried out under military rules, the presence of the disease among the men showed the inefficacy of the process. This claim of the opponents of vaccination is not well taken. On the contrary, the history of vaccination and smallpox in the United States Army suffices of itself to demonstrate that protection from the disease is proportionate to the care with which the protective operation is performed. Although smallpox has prevailed in many parts of the country during the past fifteen years, 1883 to 1897, and frequently with epidemic violence among the civil population in the immediate vicinity of military posts, there occurred only twenty scattered cases, of which four were fatal, in a mean strength of 25,000 men.

During the Spanish-American War the army was increased to 280,000 men. The medical officers who were present at the muster-in of regiments raised in the Eastern States and who expected to camp in the South and see active service in Cuba and Porto Rico, were probably more careful in seeing that the recruits were successfully vaccinated than the medical officers of the Western regiments, who did not have in anticipation an immediate exposure to infection. At all events, few cases occurred among the troops in Cuba or Porto Rico. On the other hand, a number of cases appeared among our troops shortly after their entry into Manila. These cases occurred mostly among men who had been visiting the huts of natives, in many of which smallpox of a very malignant character was prevailing. Orders were immediately issued that every enlisted man who had not been successfully vaccinated within the past six months was required to be vaccinated at once, and should the operation not prove successful, it was to be repeated at intervals of two weeks, or

as often as in the judgment of the surgeon in charge of the organization it was deemed necessary to fully protect against smallpox, but not less than three unsuccessful vaccinations from date of order would be recognized as sufficient protection. The vaccine virus received from San Francisco appeared to be inert in many cases, owing probably to heat and length of time occupied by the voyage. Some virus was obtained from Japan, but the best results were obtained ultimately from vaccine prepared by the Board of Health of the City of Manila.

These measures prevented the spread of the disease among the large number of troops quartered about Manila.

The command under my personal care at the outpost at Cavite was composed of the California Heavy Artillery, a battery of Wyoming Light Artillery, a troop of Nevada Cavalry, and a battalion of the Fifty-first Iowa Regiment. Each man was carefully vaccinated, and not a single case of smallpox developed at the outpost; while in the two remaining battalions of the Fifty-first Iowa Regiment, located at Cavite, four miles distant, there developed six cases of smallpox, with three deaths.

In contrast with these results of vaccination, isolation, and disinfection in accordance with modern sanitary methods, may be instanced the ravages of smallpox early in the present year among the Indians of the Moqui Reservation in Arizona. Many of these Indians resisted the efforts of the Interior Department to protect them and to prevent the infection from spreading to other villages. Two villages, aggregating 900 people, had been visited by the pestilence, which, owing to the opposition of the villagers, destroyed 184 out of 590 affected.

DISINFECTION.

[The State Board of Health is frequently asked by local Health Officers and others for instructions as to methods of disinfection. We cannot do better than reproduce an article on this subject from the report of the Indiana State Board of Health.]

It is impossible to lay too much stress upon the importance of careful disinfection of everything used by or around a case of smallpox in order to prevent the spread of the contagion and the subsequent reappearance of the disease.

The American Public Health Association recommends for general use what is known as its "Standard Solution No. 1," which is made by dissolving chloride of lime of the best quality in pure water, in the proportion of four ounces to the gallon, as being among the most effective agents for disinfecting excreta, vomited matters, etc. One quart of the above solution is to be used for the disinfection of a single discharge; or

if the discharge be copious, a larger quantity may be employed; for the disinfection of solid or semi-solid matters, a solution of double strength is recommended, viz: eight ounces to a gallon of water, and of this strong solution a quart is advised to be used for every four ounces of matter to be disinfected.

For use in cleansing the body of the patient or his attendants, the Standard Solution diluted with three parts of water may be used, or solution of chlorinated soda diluted with nine parts of water may be substituted. The last mentioned article (the liquor sodæ chlorinatæ of the U. S. Pharmacopœia), diluted with twenty parts of water, is recommended as a suitable agent for cleansing the entire surface of the body in cases of smallpox. A two per cent solution of carbolic acid may also be used for this purpose.

Soiled clothing is most effectually disinfected by means of boiling water, in which it should be plunged with the least possible delay upon its removal from the body or bed of the sick person, the boiling being continued for a half hour or more. If this be impracticable for any reason, the soiled articles may be placed in a two per cent solution of carbolic acid, in which they may remain until it is possible to treat them by boiling. It may be said that there is no known disease germ which will resist the effect of half an hour's boiling, and that boiling water forms one of the best, as it is one of the most readily obtainable, of disinfectants for almost all purposes. It must not be used, however, in connection with lime, or chloride of lime, cold water only being the proper solvent for these articles.

Undoubtedly corrosive sublimate is one of the most powerful and effective germ destroyers and disinfectants known, and in careful hands it may be used with safety. It is, however, highly poisonous in character, and is, therefore, deemed less applicable for general use than are the preparations already mentioned, over which it has but few advantages. Explicit directions for its preparation and use will, however, be furnished to any physician or health officer on application.

In case of death the body must be wrapped in a sheet saturated with a solution of corrosive sublimate, one to five hundred. Then envelop the body, including the head, in cotton at least one inch thick, and bandage completely. This being done, the body is to be immediately placed in the coffin or casket, which must be at once closed and not reopened. The burial should take place, if possible, on the first night after death, and should be strictly private. The body should never be transported farther than is necessary, and under no circumstances are funeral services to be held in its presence.

DISINFECTION OF THE ROOM.

When the apartment has been vacated by the recovery or death of the patient, both it and all things that have been in it during the sick-

ness must be disinfected. By far the best and safest course is to burn all bedding, clothing, and similar articles that have been in close contact with the patient, as well as all other articles that cannot be either thoroughly boiled or baked. For the room itself, and such things as cannot be thus disposed of or treated, fumigation with sulphur may be resorted to. To insure the efficiency of this, the articles to be disinfected must be exposed as fully as possible by hanging them on lines in the room. Every aperture in the apartment should be tightly closed, and not less than three pounds of sulphur should be completely burned for every thousand cubic feet of space to be disinfected. To secure this complete combustion of the sulphur it should be broken into small pieces and placed in a shallow iron pan, which is supported in a tub partly filled with water, or better, having a layer of ashes or sand in it to guard against fire. A certain amount of moisture should be generated in the room where sulphur is burned. A steaming kettle on the stove, or a few hot bricks in half a tub of water, will accomplish the purpose. After being thoroughly moistened with alcohol, the sulphur may be lighted, when the room should be at once vacated and closed, so to remain for at least twelve hours. After this the wall paper should be removed and burned, and the walls repapered or whitewashed; the woodwork, including the floors, should be well scrubbed with one of the disinfectant solutions already mentioned, and repainting or any other renovating measures deemed needful may then be carried into effect, after which the room may be returned to its customary uses. The Board believes that a solution of corrosive sublimate, one to one thousand, is the most effective in washing of woodwork, floors, etc.

DISINFECTION BY FORMALDEHYDE.

The room to be disinfected is sealed and prepared as usual for sulphur disinfection. All its surfaces are exposed as much as possible; closet doors are opened and their contents, together with the contents of the drawers, are removed, scattered about, and the drawers left open; mattresses are set on end; pillows, bedding, clothing, etc., are suspended from lines stretched across the room or spread out on chairs or other objects so as to expose all sides; books are opened and the leaves spread—in short, the room and its contents are so disposed as to secure free access of the gas to all parts as fully as possible. Upon this preparation largely depends the thoroughness of the disinfection.

For every one thousand cubic feet of space in the room is suspended, by one edge, an ordinary bed sheet ($2 \times 2\frac{1}{2}$ yards) from a line stretched across the middle of the room. Properly sprinkled this will carry without dripping five (5) ounces of formalin—the 40 per cent solution of formaldehyde—which is sufficient to disinfect one thousand cubic feet of space. As many sheets as necessary are used, hung at equal dis-

tances apart. The ordinary, rather coarse, cotton sheet should be used in order to secure rapid evaporation.

The sprinkling is done by means of a spray-producer, as it is found by long experience that the freest evolution of the gas, with the minimum production of paraform, is secured from very minute drops of the solution, individually scattered on the evaporating surface—not touching or running together.

When all is in readiness in the room, the disinfecter ties a damp towel over his mouth and nose, and, beginning with the sheet farthest from the door of exit, rapidly sprinkles each sheet on his way out, being careful to spray evenly and no space more than once.

The evolution of the gas is so rapid that the air becomes irrespirable in about three minutes, so that quick action is necessary. It has also been found necessary to provide the operators with surgeons' rubber gloves to protect the hands and wrists from the spray.

The room is left closed not less than five hours, after which it opened up as freely as possible to light and air; the family is instructed to have all woodwork well scrubbed with soap and hot water or with the mercuric chloride solution, and the furniture and other objects thoroughly wiped off with cloths dampened with dilute formalin, one part formalin, twenty parts water.

Second Method.—If for any reason the above method of formaldehyde disinfection cannot be used, the following alternate method may be practiced:

Prepare the room as above described, except do not suspend sheets; then with a small sprinkling-pot sprinkle over carpet, floor, bed, furniture, and wall, a mixture of eight ounces of 40 per cent formaldehyde and one pint of warm water. Close the room for at least five hours, then open and thoroughly clean.

THE COLLECTION AND DISPOSAL OF SEWAGE.

By C. E. GRUNSKY, C.E.

Read before a Convention of Health Officers held in San Francisco under the auspices of the State Board of Health.

MR. PRESIDENT, LADIES AND GENTLEMEN: Sanitary boards are directly concerned in those problems which relate to the maintenance of dense population on relatively small areas without undue menace to health and comfort.

Not least among these problems are those which deal with the disposal of waste of all kinds.

The collection and disposal of sewage, a class of refuse and waste, diluted with water, is to be briefly noticed in this paper.

It seems to be generally accepted that water carriage of sewage proper, including excrement from the human body, offers the simplest and best means for a collection of this material, and it is not necessary to now reopen a discussion of the question whether it does or does not, particularly as the same never became an important issue with us. But it is well to remember that this question of dry or wet treatment was discussed with some acrimony in Europe, and that there are still many, even large cities, such as Glasgow and others, in which much of the fecal matter is collected in special receptacles and carted away at night.

It will suffice to say that water carriage is with us almost universally introduced just as soon as the water-supply will justify.

Sewage, then, is the water-carried waste from the human body, from the kitchen sinks, from industrial establishments and the like, and this, as in the case of other offal or waste, such as garbage, should be collected and disposed of in some way that shall not only render it harmless, but that shall give the least possible offense, not only to the community producing it, but to neighbors as well.

The quantity of sewage proper produced in any town or city, or in any selected district of any city, is limited. It is generally determinable, with a fair degree of approximation, from the water-supply, of which a large proportion after use in cleaning the human body, the utensils in and the surroundings of our establishments and homes, becomes the carrier of the waste.

The degree of dilution is not always the same; it depends upon local conditions, not the least of which is the water-supply, and it varies somewhat for the different times of the day. But these are all minor matters of comparatively small import when compared with the two main questions to be answered in connection with the sewage problem presented by every populous district: "How shall sewage be disposed of?" "How shall sewage be collected?"

The disposal of sewage should be such that there will be the least possible danger of disseminating or propagating disease germs, and that the least possible offense will be given to the senses.

A delivery into the ocean (provided winds and currents are such as to prevent the fouling of the beaches and of low, flat areas) is entirely unobjectionable; but in the nature of things very few cities are so situated that sewage can thus be disposed of.

The delivery into rivers, no matter what their volume of flow, nor how dilute the sewage, should be considered only a temporary expedient. Such delivery is always to be considered a fouling of waters which should be kept as pure as possible. This method of disposal is particularly objectionable when the river is a source of water-supply

for communities below the point at which the sewage is discharged into them. Nor should the fact that the State itself thus disposes of the refuse of some of its institutions—as at the Folsom State Prison—be held to justify other localities in treating the use of the river as a sewage recipient, otherwise than as a mere temporary arrangement to be modified as soon as sewage increases in volume sufficiently to make the fouling perceptible to the senses, or as soon as demanded by any locality whose water-supply may thereby be contaminated.

Marysville, on demand of Sacramento, should be compelled to dispose of its sewage otherwise than by dumping it into the Yuba River; the State, on like demand, should modify its system of sewage delivery into the American River at Folsom; Stockton and Sacramento should be restrained from pumping sewage into the San Joaquin and Sacramento Rivers on demand of any resident on the river banks below these cities.

But if thus restrained, then what?

This question of what to do with sewage in cases where its delivery into rivers is objectionable and no other place of outfall seems available has provoked most careful inquiry and has received careful consideration by many scientific boards. It has occasioned much discussion, and has led to remarkable and most welcome progress in sanitary science. The Rivers Pollution Commissions of England and the Massachusetts State Board of Health have been foremost in making the necessary scientific investigations, and it is through their efforts that a clear understanding has been reached of what is necessary to do to accomplish the desired end.

In the first place it seems clearly established that a mere dilution of sewage such as results when it is delivered into a river of large flow does not destroy disease germs. It merely disseminates or scatters them through greater volumes of water. And even when the partial oxidation of organic matter in flowing water is conceded, there still remains good ground for objecting to this means of disposal.

The first Rivers Pollution Commission of England was appointed in 1865, and in its reports emphasized the fact that purification of flowing water occurs only in exceptional cases, and that sewage cannot be discharged into any stream or its tributaries without menace to the health of those using its waters.

As the practice of discharging waste from industrial establishments of all kinds, as well as crude sewage, into rivers had become very general in England, this conclusion was not accepted without opposition—an opposition which undoubtedly came largely from those who did not wish to be burdened with the additional expense that would be put upon them if they were denied the privilege of dumping their refuse into the rivers.

The appointment of a second commission became necessary, which says, in one of its reports: "A very large proportion of the running waters of Great Britain are either at present dangerous (to health) or are rapidly becoming so." "When the sewage of towns or other polluting organic matter is discharged into running water the suspended matters may be more or less perfectly removed by subsidence and filtration, but the foul organic matters in solution are very persistent." "There is no river in the United Kingdom long enough to secure the oxidation and destruction of any sewage which may be discharged into it even at its source."

The conviction that water, once fouled, could not be purified by any method led at least one prominent sanitarian to the conclusion, some years ago, that water for domestic use should not be drawn from rivers at all, for it seemed hopeless to him to cut off all sources of possible contamination, even though crude sewage were carefully excluded.

By chemical treatment, often advocated, and as represented by numerous processes, it is possible to free the sewage of a portion of its organic matter. The amount thus removed in actual practice rarely reaches one half; it is generally only from one fourth to one third. The processes employed are varied, both as regards the chemicals employed and the method of handling the sewage. Sulphate of iron or sulphate of aluminum, together with lime, are the substances most frequently employed to produce chemical precipitation. The settling-tanks are generally arranged for either intermittent or constant service. In the latter case, now generally preferred, they are narrow—usually about 30 feet wide, and long, sometimes 600 to 1,000 feet. The sludge removed from those used for the treatment of London sewage, after concentration in secondary tanks, contains 90 per cent of moisture.

No practical chemical treatment has yet been discovered which does not leave considerable suspended organic matter in the effluent, and about all that can be said in its favor is that it effects a reduction of the amount of such matter and very often prevents fouling of a stream to that degree which renders it apparent to the senses. There seems to be no justification for turning the effluent from chemical precipitation works into a stream which is to be drawn upon as a source of water-supply.

Chemical treatment produces a sediment or sludge of so little manurial value that it is difficult to dispose of the same, even in England, where the value of manure is fully appreciated.

There are, however, cases where this treatment is justifiable. Its advocates some years ago secured its adoption by London, but the system as applied to that metropolis has not escaped unfavorable criticism. The sludge formed in the London settling-tanks is carried fifty miles to sea in specially constructed barges. The effluent flows into the Thames.

Once the conclusion was reached that neither by dilution with water nor by chemical treatment could sewage be made harmless, special attention was devoted to experiments with filters, and the work was so thoroughly done that the problem of their successful use, not alone in the matter of sewage purification, but also in connection with water-supply for domestic purposes, has been solved. These experiments, as conducted in our country under the immediate personal supervision of H. F. Mills of the Massachusetts State Board of Health, have attracted the attention of physicians and sanitarians in all parts of the world, and the conclusions reached are being verified wherever properly established filtration systems are made a part of sewage disposal works.

Without entering into detail, it may briefly be stated that in the upper layers of a mature filter—and it does not seem to make much difference what the nature of the material composing the filter is—the organic substances in sewage, all carbonaceous and nitrogenous substances which are subject to putrefaction and decay, are changed into harmless compounds. This change is largely due to chemical action facilitated by micro-organisms that have, not inaptly, been called “friendly microbes.”

The action of a new filter does not become fully established until its upper layers are thoroughly colonized with these micro-organisms. Such colonization, however, takes place naturally and easily as a direct result of the application of sewage to a filter. Filtration not only reduces the carbonaceous and nitrogenous substances, but of the 500,000 to 3,000,000 bacteria per cubic centimeter in the sewage, very few are found in the effluent; or, better stated, the few found in the effluent are principally harmless varieties.

Furthermore, it was found that filters are practically permanent; that they do not require renewal; that an occasional raking of the surface layers is sufficient to prevent clogging; but that aëration, to be secured either by intermittent use or by forcing air through the filters to the material to be filtered, is necessary.

Much other information of practical value was collected in connection with these studies and investigations in Massachusetts, but as it has been fully published, it need not be further alluded to here.

The conclusion has been reached that the use of filter beds on a large scale, for the treatment of the sewage of interior cities and towns, and the delivery of the effluent, if any, into natural watercourses, is an entirely satisfactory and unobjectionable method of treatment. Moreover, practical experience has demonstrated that such conclusion is sound.

Berlin may be cited to illustrate this fact. The sewage of that city—30,000,000 gallons per twenty-four hours—is collected at twelve pumping stations, each of which receives the sewage of one of the twelve

districts into which the city is divided, and is by the pumps sent from from 6 to 12 miles in pipes, some toward the north and some toward the south, to two sewage farms, of which the combined area now in service is 11,000 acres. The sewage is delivered at the high points of these farms, and flows thence in open earthwork ditches to the tracts of land prepared to receive it. These tracts are planted in cereals, in grasses (timothy and Italian and rye grass), vegetables, trees, osiers, and other cultures, and are thoroughly underdrained. Soil drains are 16 to 30 feet apart and 3 to 4 feet deep. Cereals receive no irrigation with sewage after sprouting. Grasses are irrigated by broadcast flooding, the sewage being generally allowed to pass through broad, shallow trenches intended to intercept, to some extent, the suspended matter. The sludge thus intercepted, after being sun-dried, is ready for use as a fertilizer. The details of the management of these extensive sewage farms offer a great deal of interest, but cannot be discussed at this time; but this reference to the Berlin sewage farms is important, for the reason that they are a success. The effluent is clear, inoffensive, and harmless. Fish thrive in a pond filled with it, established for experimental purposes. It does not become foul in its flow through a natural channel to the river Spree, and does not in any sense foul the waters of that river. The managers of the farms and their families are domiciled on the farms, so are all the assistants and laborers. They form a population of nearly 1,600, and, according to careful statistics, preserved since 1885, the farms are remarkably free from zymotic diseases, and are otherwise exceptionally healthful.

These results are particularly noteworthy, because the establishment of the first sewage farm in 1874 to the northward of Berlin met with violent opposition. There were numerous complaints of damage done by overflowing sewage, and of offensive smells. These complaints led to action by the State prohibiting the further use of the sewage on the farm; but as a result of the investigation which followed, improved methods and management were recommended, and operations were allowed to be resumed, with highly gratifying results. Not only is the sewage satisfactorily and thoroughly purified by filtration on the selected tracts, but the farming operations yield a profit.

Allen Hazen, in a recent paper read before the Boston Society of Civil Engineers, in speaking of the possibility of so purifying sewage that its discharge into lakes or rivers which are sources of domestic supply will not be a menace to health, says: "Years ago, before the germ theory of disease was established, the possibility of purifying sewage in this way would hardly have been admitted, but thanks to the more recent German and English investigations, as well as to the experiments of the Massachusetts State Board of Health, it is now well known that it is entirely possible to accomplish this through the won-

derful purifying power of sandy soil under proper conditions; and it is actually a fact that the effluents from certain European sewage works, as well as from some of the purification fields in Massachusetts, are preferable, from a hygienic standpoint, to the public water-supplies of a number of large American cities."

Berlin is somewhat remote from California to be cited as an example worthy of imitation in the matter of sewage disposal, but it is one of those places where the success of the method seems to go unchallenged, and where the method employed, as will readily suggest itself, is one that should receive some consideration whenever it is necessary to determine how to dispose of the sewage of any of our interior towns.

The soil of the sewage farms near Berlin is a sand or sandy loam, but other soils have elsewhere been successfully used in the same way. Even in California, examples can be cited where sewage has been applied for many years to adobe land without giving the least offense.

Paris sewage, to the extent that lands for irrigation have been made available, is pumped from the sewer main upon these lands and the rest is discharged into the river Seine. Until quite recently less than one fourth of the sewage of that city was put on the land for treatment. The rest accomplished very thoroughly the fouling of the river Seine. It is understood that to the original 2,000 acres of land prepared to receive sewage, 25,000 more are to be or have already been added; and it is hoped that the same change in the condition and appearance of the Seine will be the result as has been recorded for the Spree at Berlin, which is now entirely inoffensive, and which, before sewage was purified, was almost as black and filthy as our own open waterway on Channel Street.

Again, quoting from Mr. Hazen's paper: "The German cities as a rule are situated upon much larger rivers than the English cities, and sewage disposal has not been so pressing a problem with them; but on the other hand, the conditions for disposing of the sewage upon land are much more favorable than in England, and the expense of carrying out the process is less; and now that the process has been demonstrated by many years' trial by the three cities (Berlin, Dantzig, and Breslau) to be a practical success, the Imperial Board of Health, which has great power in these matters, is insisting on the adoption of sewage purification in almost all cases where important extensions or changes in the sewerage systems are adopted. As everywhere else, it is difficult to prevent a city which has been discharging its sewage into a river from continuing to do so, particularly where the river is large enough so that no great nuisance is caused. But when a city wishes to extend its sewerage system or increase the size of its sewers and the project is sent to Berlin for examination and approval, then the board can take the position that the sewage should be purified, and it generally does so."

In this State there is comparatively little sewage irrigation, and so far as known none receiving that careful attention which is necessary to make the treatment of sewage for the purpose of completely destroying disease germs, which it may contain, an unquestioned success.

At Los Angeles the sewer main leads direct to an outfall into the ocean, but along its course sewage may be had for irrigation by any one desiring to so use it. Only a part of the city's sewage is now so used. The aggregate area irrigated near Los Angeles is about 3,700 acres.

At Pasadena about one half of a sewage farm of 300 acres is irrigated with sewage.

At Fresno the sewage is spread upon land 5 or 6 miles to the westward of that city; so also at Redding a sewage farm has been established.

In connection with every local sewage problem this question of disposal must be considered, and enough has been said to indicate that no fear need be entertained that the question cannot be satisfactorily answered. It is generally assumed that, depending upon character of soils and subsoils, from 200 to 500 acres per 1,000,000 gallons of sewage in twenty-four hours are necessary to successfully dispose of it when used for irrigation. But these figures are based upon experience in the East and in Europe, and should only be considered of value as indicating the result of the experience in a much more severe climate than that of this coast. The rate at which sewage may here be applied to land with satisfactory results remains yet to be determined.

Elsewhere than in California, and the exception might almost be restricted to San Francisco, it would seem almost superfluous to say anything about the collection of sewage, but we have grown to accept as an established fact and as a necessary evil a lack of system in this matter and a haphazard method of procedure that is really beyond comprehension. This statement applies with full force to this city, in a much less degree to our other principal centers of population, and under the circumstances it may not be amiss to say a few words on this subject.

Water carriage of fecal matter with other waste being accepted as an established condition, it becomes necessary to so construct the conduits as not to poison the air we breathe or the soil under foot. It becomes necessary, too, to determine whether the conduits for the sewage are to be made large enough for rain-water as well, or whether they are to carry only sewage proper. Here, again, local conditions must be well considered. It is sometimes possible to send rain-water over the surface of the streets in open gutterways to an outfall, but often this cannot be done, for the reason that its volume becomes too great. It must then be put into subsurface channels, which not infrequently are almost co-exten-

sive with the conduit system for sewage proper. The economy so often claimed for the separate system of sewerage rarely exists; on the contrary, when any storm-water conduits are necessary they, in conjunction with the sewers proper, may generally be assumed to cost more than sewers for the combined flow of sewage and storm-water.

It must be apparent at once that a city located like Alameda, which sheds water, like a duck's back, toward both sides, can well be sewerred on the separate system without the use of any storm-water sewers; while in many portions of San Francisco the choice lies only between either a combined sewer or two complete conduit systems, one for sewage and one for storm-water only.

Conduits for storm-water only are not common in California, and they are not, under ordinary circumstances, desirable, because they would be practically out of service for long-time periods and would be extremely difficult to keep in a satisfactory sanitary condition; they may be fully as objectionable as large sewers adapted to storm-water flow and usually charged with a flow representing only a small fraction of their capacity.

The leaning of sanitary engineers at the present time seems to be toward small sewers on the combined system, with relief outlets for excessive storm-waters.

No inflexible rules can be laid down as to the best system of collection, but this system should be determined in each case by topographical features, climatic conditions, and the like, not uninfluenced by the predetermined method of disposal, as well that which may be adopted as a temporary expedient, as also that which is ultimately to be adopted.

Whether collected in separate conduits, or by any other system, the sewage once delivered into conduits must be carried to the outfall point. Ordinarily, this is accomplished in whole or in part by gravity flow. The conduits unite with each other, until finally the entire flow from a district—which under certain favorable topographical conditions may embrace an entire town or city—is in a single main. Often the flow of a series of main sewers is received into what might be termed an intercepting sewer.

Sewers are usually constructed along street lines, and this fact is to be taken into consideration in establishing street grades. The sewers are generally so designed that the sewage flows with sufficient velocity to reach the outfall point in so short a time as not to become putrescent, and to keep deposits from accumulating along the lines of sewers. All this seems simple enough, and when sewers are thus constructed, it would seem an easy matter to secure a proper ventilation and thorough flushing and to establish adequate systems of traps to prevent a flow of noxious gases from the sewers into dwellings.

But these simple principles are occasionally ignored to an extent surpassing belief, as illustrated in this city, in which about one fourth of

the population of the State—a population large enough to justify extreme sanitary precautions—is compressed into an area of about 10,000 acres, which is traversed in all directions by conduits built without system and reeking with filth. For forty years sewers have here been constructed without regard to volume of sewage to be disposed of. Their size seems to have been determined rather by the value of the abutting property, which was assessed to pay for them, than by the requirements of drainage. They do not form part of a system. There is not even an attempt, except in a few outlying districts, to effect the gradual convergence to main lines, but down-hill and up-hill throughout the length of each street the sewers extend, cutting through each other at every street intersection, and making it absolutely impossible to outline the districts which are tributary to the mains. Furthermore, there is a complete disregard of the fact that the sewage conduits should be built on proper gradients. The conduits are supposed to be placed 10 feet below street surface—an absurd requirement. Those descending steep hills lose their grade suddenly at each point where they flow 60 to 80 feet from one side to the other of cross streets. Then they pitch down to the next street, where, possibly, the outlet from a sewer—big in the crossing only—is 1 to 2 feet above the entering sewer on the other side of the street. Elongated pools of reeking putrescent filth are thus formed and lie scattered throughout the most populous parts of the city. Such sewers cannot be flushed out nor kept clean in any other way than by being in large part reconstructed. This is not an overdrawn statement and it is not the first time that it has been made, but no apology is needed for repeating it. The foul condition of our bay frontage, where our sewers terminate from block to block as they happen to reach the water-line, is known to everybody. The open waterway of Channel Street, as a former health officer, Dr. Henry Gibbons, in 1874, put it, “smells to heaven with a loudness and persistence that the strongest nostrils may not withstand and the disinfectants of a metropolis could not remove.” The useless storm-water inlets and catch basins—15 per cent of which, in the heart of the city, are on gutter summits where no water can reach them—bring the evidence of the condition of the sewers to our sense of smell at every street corner, and serve to illustrate the absurdities that have been incorporated into the local sewerage works. Our winds are our salvation—without them the effect of the filth accumulations but a few feet below the street surface would be still more apparent in the disease records of this city. The hope, however, is justified that when due regard is had, by the municipality as well as by the individuals, to the advice and mandates of well-informed and progressive boards of health, an efficient sewer system will result, which, aided by the natural climatic advantages of this city, will completely banish zymotic disease.

SHOULD STATE BOARDS OF HEALTH BE GIVEN A CONTROLLING VOICE AS REGARDS PLANS FOR PUBLIC WATER-SUPPLIES AND SEWERAGE SYSTEMS.

BY C. O. PROBST, M.D., SECRETARY OF OHIO STATE BOARD OF HEALTH.

Read at a Conference of State and Provincial Boards of Health, held at Atlantic City, June 1 and 2, 1900.

The discussion of this question may take different directions, according to the point of departure:

First—Is it necessary that municipalities or private corporations should be subject to the control of a higher power as regards their plans for introducing public water-supplies or sewerage systems? Does such oversight or interference smack too much of paternalism?

Second—Should the State intervene only after a public water-supply has become polluted, and then by attempts to prevent contamination of the source of the supply rather than by requiring purification of the water consumed?

Third—If the State should control plans for water-supplies and sewerage systems, can it do it best through the State Board of Health or some other board or commission?

To show what is being done in this country and in Canada along this line, I endeavored to collect the laws of the various States and Provinces bearing upon the prevention of the pollution of public water-supplies, but was only partially successful. Most of the States and Provinces have enacted laws against such pollution, but none so far as I can learn, except possibly in some special case, has by a general Act prohibited the turning of raw sewage into sources of public water-supplies.

One might believe from the Ohio law on this subject that a practical manner to purify household sewage is to run it through an underground conduit. For instance, a poor night-soiler was arrested and heavily fined for dumping a barrel of night soil into a river within the limits of one of our cities, although some distance below the city proper, while thousands of barrels of the same matter were being discharged daily into the river in the heart of the city by its sewers.

It will hardly be disputed that the attempt to prevent the pollution of sources of public water-supplies by legislative prohibitive enactments has proved a failure. This may be called the do-nothing policy, which is the present policy of the great majority of our States.

Some States have attempted to control this question by granting powers to municipalities or to owners of waterworks to punish and prevent the pollution of their supply within certain distances. Ten miles is the limit in Ohio; Massachusetts, to whom we readily yield in this

matter, has placed the distance at twenty miles. Without discussing the wisdom of fixing these arbitrary limits, it may be said for Ohio, that the powers of this law are seldom, if ever, evoked. The States of both Massachusetts and Ohio have resorted to other methods to protect municipal water-supplies. It may be said that this plan of authorizing municipalities to protect themselves by the enforcement of laws against the pollution of public water-supplies has also, on the whole, proved to be a failure.

More than this may be said, for it can be shown that municipalities cannot be trusted at present to protect their citizens against the pollution of the water-supply by the municipality itself; and I will endeavor to show the necessity for some higher power to control plans for public water-supplies and sewerage systems. The examples to be cited in favor of State control will refer almost wholly to Ohio, because of my greater familiarity with conditions in this State, but it may be assumed that like conditions exist, to a greater or less degree, in other, perhaps all other States.

Before making reference to these concrete examples of municipal failure to guard water-supplies against sewage pollution, and as partly explanatory of existing conditions as regards water contamination, we should recall the fact that sewers were originally constructed almost wholly for the purpose of removing storm and subsoil waters, and hence the right or the wisdom of discharging them into the most convenient stream or body of water was not questioned. Later, when sewers began to be used for removing household, factory, and other waste matters, attention was directed to the possibly injurious effect of allowing such matters to enter sources of public water-supplies. At this time bacteriology was practically unknown, and the amount of organic matter in water was the sole measure of its purity. London's water-filters, constructed to remove this dead organic matter, by rare good fortune at the same time removed the larger part of living disease-producing organisms. At this time, too, but little was known of sewage purification, and there seemed to be no other way to dispose of sewage than to discharge it into water.

Custom, then, which is often stronger than law, gave to municipalities the apparent right to pollute streams with sewage—a right they have more or less successfully enjoyed to this day. True, the courts long ago denied this right. The statutes of most of our States, following the laws of England, forbid the pollution of streams, and our higher courts have upheld this law; but in spite of this the pollution of sources of public water-supplies by sewage goes on throughout our country.

The knowledge of the disease-producing properties of polluted drinking water is gradually spreading among the people. It is possible that the sanitary crusade in which State Boards of Health and sanitary

organizations are more or less actively engaged, will eventually create such an overwhelming sentiment in favor of pure water-supplies that municipalities can be safely trusted to make full use of the powers granted them by the State for self-protection. My contention is that this happy condition of sanitary enlightenment has not been reached, and that for many years to come a supervising power should be exercised by the State to protect its citizens against impure water-supplies.

The law requiring plans for waterworks and sewerage to be approved by the Ohio State Board of Health was passed in 1893. A few examples of plans executed by municipalities and private corporations before that time may be cited :

Lorain and Conneaut are small cities similarly situated upon the shores of Lake Erie. They pour their sewage into rivers which flow through them, and take water from the lake a little to the west of the mouth of the river, and not far from the shore line. The lake has a very slow current to the east, which ordinarily carries sewage away from the waterworks intake ; but with the wind from the northeast, a frequent condition, the current is westward. Both cities have suffered severely from typhoid fever, unquestionably due to the pollution of their water-supply. Lorain introduced water-filters a few years ago ; Conneaut has just done so, as a result of a severe epidemic of that disease.

Bellaire obtains its water-supply from the Ohio River at a point only a few hundred feet below the mouth of a small creek which receives nearly one-half of the sewage of the city. Prior to 1893 a new sewer district was formed, with the outfall sewer to this creek. The State Board of Health held a public meeting in Bellaire and urgently protested against this outlet, but had no authority to prevent its being placed there. All these years Bellaire has suffered more or less severely from typhoid fever, and continues to suffer.

Many similar examples could be cited.

It may be said that at the present time the public has been enlightened on this subject, and that municipalities, even if uncontrolled by the State, would avoid such serious errors. Let us see.

A few years ago the city of Cleveland annexed a village to the west, with the understanding that sewers would be provided for annexed territory. Plans for a sewer to empty into Lake Erie to the west of the city's water intake were presented to the State Board of Health. Cleveland was already suffering from a sewage-polluted water-supply, as shown by her typhoid death-rate. The proposed sewer would have very considerably added to this pollution. The State Board of Health disapproved the plans, which so incensed those in power that there were threats of having the State Board of Health abolished by the next Legislature. The *people* of Cleveland believed in the Board. The final result was the provision for a complete change in their system of sewer-

age, and a new water intake, which improvements, when completed, will unquestionably add greatly to the healthfulness of that city.

Another example in the same locality, and as recent as 1900, may be given to show that municipalities should be controlled in this matter of sewerage and water-supply.

Lakewood is a suburb of Cleveland, practically a part of that city, and Cleveland furnishes its water-supply. It is on the lake, and west of Cleveland. This hamlet came before the State Board of Health on several occasions with plans for sewerage, but always with the proposition to turn more or less crude sewage into the lake. While the danger of polluting Cleveland's water-supply was not so great in this case as in the one just given, examinations had shown that the lake currents would carry sewage directly toward Cleveland's new intake. Although it is to be about five miles from the proposed sewer outlet, this proposal was considered too serious a menace to Cleveland's water-supply to be approved. This led to several engagements between the State Board of Health and the hamlet authorities. Finally, when the Legislature met in January, 1900, a bill was introduced which would have permitted Lakewood to do that which the State Board of Health had said they should not do. And remarkably enough, the author of the bill is a citizen of Cleveland. The bill, it may be said, got no further than a committee hearing, and Lakewood has since presented plans for sewage-purification works.

Columbus has been planning a new water-supply for several years. It is proposed to obtain it by constructing a storage dam in the Scioto River. That this supply in its natural state would be unsafe, must be admitted by any one who will study the reports of the State Board of Health upon the condition of this river. The Board has approved plans for this new supply, but with the provision that it shall be filtered to the satisfaction of the Board. One of our daily papers took up arms against filtration as an unnecessary expense. A former administration showed decided hostility to this provision of the Board, and while the present administration seems to have accepted, and perhaps favors it, it may be considered as doubtful whether the new supply will be filtered unless the State Board of Health continues to insist upon it.

It is scarcely necessary to further illustrate the need for State control of municipal action in this matter of public water-supplies, and if municipalities which own their own waterworks should have a controlling oversight, it is even more necessary in the case of private water companies, whose interest is a purely financial one. It is true that these private companies are beginning to realize that it is a bad investment to introduce water which an enlightened public may shun on account of suspected or known pollution, and that they must pay greater attention to the question of purity.

One other phase of this subject should be at least mentioned. Any one who has had occasion to know the true inwardness of municipal government will realize the dangers lurking in schemes to improve (?) the water-supplies of large cities. Vicious politics will often enter into such a question, and the most daring attempts are made to foist upon the public some plan for a new water-supply which no State Board of Health would approve.

If it be granted that the State should control the purity of public water-supplies, how can this best be done?

Some of the States have given to their Boards of Health, or some other body, the authority to make and enforce rules and regulations to protect the purity of municipal water-supplies. This authority, in some cases, may even extend as far as to require the introduction of sewers, or sewage-purification works. The secretary of one of our State Boards of Health informs me that such a law, which has been in force for some years in his State, has been inoperative and practically a dead letter. In one of our large Eastern States, such a law has, apparently, given good results.

As the fundamental principle of sanitation is that prevention is better than cure, the true policy would seem to be to prevent the introduction of a polluted water-supply; and where no other source of supply is to be had, to require either the purification of the supply or the removal of sources of its contamination at the time of its introduction. That is, the State should approve all plans for public water-supplies or sewerage systems before they are introduced.

This looks only to the future. For the fullest protection of its citizens the State should have regard to both of these things. It should protect existing water-supplies by removing, as far as possible, sources of contamination, and it should allow the introduction of no supply that is already polluted. The laws of New York and the recent Act of the State of New Jersey are based upon this principle.

The Act of New Jersey brings forward the third proposition laid down, viz: whether the State Board of Health or some other agent of the State should control plans for water-supplies and sewerage. New Jersey has created an independent sewage commission, which appears to be made the guardian of practically all the fresh waters of that State.

It is perhaps hardly proper that an interested party, representing, as the author does, a State Board of Health, should attempt to discuss the question of whether the State, in protecting water-supplies, should exercise its powers through its State Board of Health or some independent board or commission. And yet this question is one of much importance, in view of the fact that Massachusetts, New York, New Jersey, and Ohio are the only States that have assumed control of plans for waterworks and sewerage, and of the great probability that other States will in the

near future take similar action. Perhaps I can do no better than to quote from a recent letter received from Mr. M. N. Baker, associate editor of the "Engineering News," one who is well known to the sanitary and engineering world as having given much attention to this subject, and who may be supposed to be unprejudiced. He says: "You wish to know my opinion of the relative merits of placing this work in charge of State Boards of Health as against separate commissions. Like most other questions of public policy, this one really needs to be considered in connection with local conditions in each State. As a general proposition, I should favor giving the work to State Boards of Health. First, because I think it desirable never to create a new commission when there is one in existence which can do the work; and, second, because the duties in question are distinctly in the line of health work. Besides this it is difficult enough, as you and I know too well, to get money for sanitary work from State Legislatures, and in most cases, I think, a given sum would go further if intrusted to a State Board of Health already in operation than if turned over to a new commission. Every State Board of Health, of course, should have a competent engineer, chemist, and bacteriologist, and any separate commission designed to protect public waters requires the same. Two forces of scientific men might in most cases be combined with a saving."

I will not attempt to add anything to this argument in favor of State Boards of Health.

Assuming that the State Board of Health should have controlling action for the protection of existing water-supplies as well as those to be introduced, there remains one or two questions of interest to be discussed.

Berlin has shown us the possibility of disposing of large quantities of sewage upon land, but it seems probable that our watercourses must forever continue to receive sewage. The engineer, assisted by the chemist and bacteriologist, has shown us that in many cases this may be done without much danger; but it is here that municipalities fail in their duty. The need for sewage-purification works is seldom much felt by the municipality contributing the sewage. It is some municipality below that receives the injury; and it is seldom that we find a municipality willing to tax itself for the sole benefit of another.

The question of who should pay for sewage-purification under such conditions is open to argument. The city discharging sewage into a stream may contend that if a city below wishes to use the stream for a water-supply it may render such water safe by purification; and that, as its citizens are the ones to be benefited, they should be willing to pay for it.

The laws of New York give recognition to this principle, by providing that the expense of protecting public water-supplies by introducing

and maintaining sewerage and sewage-purification works, or by other means, shall be paid by the municipality or corporation owning the waterworks to be benefited. The cities of New York, Brooklyn, and Utica have spent considerable sums for this purpose. The city of Boston, Massachusetts, to protect its water-supply, paid the cost of installing sewerage and sewage-purification works for several towns within the territory of the watershed furnishing its supply.

While at first glance there is much to be seen in favor of placing the costs of sewage-purification upon those directly benefited, further consideration may lead us to an opposite view. A fundamental principle of law is that no individual has the right to use his property in such a way as to interfere with the rights of another person, at least without the payment of proper damages. No one has a right to cause or maintain a public nuisance. (Observation shows us how very frequently these rights are ignored.)

Take an example under the New York law. A city of 10,000 inhabitants, upon the banks of a river, has no available public water-supply except such river. A few miles above, a city of a half million inhabitants is discharging unpurified sewage into this stream. Owing to unfavorable natural conditions the cost of satisfactorily purifying the sewage of such city will be a million of dollars, or one hundred dollars for each man, woman, and child in the city below. In addition, this smaller city must pay the operating expenses of the purification plant.

The result would inevitably be that this city will continue to use a grossly polluted water-supply, or it must purify it. We will return to the latter proposition further on.

If, as I maintain, sewage which enters sources of public water-supplies should be purified, it is evident that in many instances the cost of purification cannot be undertaken by those directly benefited.

There would seem to be cases where an equitable division of the cost between the two communities interested would be the fairest for all. It would be difficult, perhaps impossible, to lay down any hard and fast rules for such a division. The merits of each case would doubtless have to be passed upon by a proper court of equity. The question will often be one of interstate interests. This is manifestly so in Ohio as regards water-supplies taken from the Ohio River. National interference will be required in such cases. This is proposed in a bill by Mr. Pearre, now before Congress.

That municipalities cannot always be depended upon to protect their citizens against polluted water-supplies has been shown, I think, by examples already cited. I will not attempt to explain why communities are seemingly content to suffer year after year from losses caused by a polluted water-supply. The ignorance of the masses and the hostility of the wealthy classes to improvements which increase taxation

enter into it. The latter can largely protect themselves against polluted water by house-filters, the purchase of table waters, etc. The purification of public water-supplies is truly a philanthropic measure, and one that should receive more attention from those who are laboring for the masses. In Ohio it requires a two-thirds vote in favor of expenditures to improve a municipal water-supply—at least, if any considerable sum of money is necessary—so that a measure of this kind often fails even when the majority are in favor of it. The Ohio Legislature has just enacted a law which permits municipalities to issue bonds for sewage-purification when the majority of those voting upon the proposition vote in favor of it. It would be an excellent thing to broaden this law so as to include water purification.

Something more than this is demanded, however, if we would protect our people against water-borne diseases. The State should be able, it seems to me, to compel municipalities to give needed protection to their citizens. Whenever the State Board of Health shall have proved to the satisfaction of a proper court that a public water-supply is polluted and the cause of disease, such court should have authority to require the necessary changes and improvements to be made. If the pollution is caused by the sewage of a neighboring municipality, a reasonable time only should be given such municipality to make proper disposition of its sewage. If, in addition, the water-supply in question should be purified, an order to that effect should be within the discretion of the court. The court should also equitably apportion the cost of these improvements between the two interested communities. Federal courts should have the same authority where interstate questions are involved.

A strong plea in favor of such control by the higher powers may be found in the fact that a city having a polluted public water-supply constitutes a menace to the entire State, or even to the whole country. A good many outbreaks of typhoid fever in different places in Ohio have been traced to Cincinnati or Cleveland. A man who contracted typhoid fever in Cleveland came down with the disease in one of our villages which had been practically free from it for more than twenty years. He started an epidemic in that village which was of yearly occurrence for a period of ten years, causing many deaths in that time, and which was arrested only by radical measures to protect the ground-water against pollution. Many examples of this kind have come to my knowledge, and they are, doubtless, constantly occurring, although unnoted. Was not the great Plymouth epidemic of typhoid, with its thousand and more victims, traced to a man who contracted the disease in Philadelphia?

A polluted water-supply is not, therefore, a purely local question; it is more or less a danger to all our people.

A different plan, as already suggested, should be followed as regards municipalities or corporations that are preparing to place crude sewage into waters now used for domestic purposes. In these cases there is good reason for absolute prohibition without proper purification of the sewage or other polluting matter. There is no retroaction in the enforcement of such a measure, and no invasion of rights, fancied or real, acquired by the long use of a sewer outlet. It is, furthermore, eminently practicable to prevent further pollution of public water-supplies. Ohio has had but little trouble in doing this since the passage of our Act of 1893, but it has been possible to do comparatively little in removing sources of pollution that existed prior to that time.

Altona is often cited as an example of the possibility of purifying a water grossly polluted by sewage; and the fact is often quoted that her filters protected her against the cholera epidemic from which Hamburg suffered in 1892. From this it is argued that sewage purification is unnecessary, and that each municipality may protect itself by filtering its water-supply. It will be remembered, however, that there was a slight outbreak of cholera in Altona at this time, and that Koch traced it to one of her filters which became frozen while attempting to clean it in cold weather, and allowed polluted water to pass through.

The lesson to be learned from this is that we should not depend altogether upon water purification to protect us against water-borne diseases. We must also protect public water-supplies against contamination. Sewage purification has not yet reached that perfection which makes it safe to turn the purified sewage into a stream used farther down for a public water-supply. This is true, at least, within certain distances, which, perhaps, no one would wish to accurately determine at this time.

To the question, then, "Should State Boards of Health be given a controlling voice as regards plans for public water-supplies and sewerage systems?" I would unhesitatingly answer Yes, and in addition would urge that they be empowered to protect communities against dangerously polluted water-supplies already in use.

DIPHTHERIA; ITS RESTRICTION AND PREVENTION.

Diphtheria is so frequently malignant and fatal in its effects that the State Board of Health, in the exercise of its functions in the restriction and prevention of disease, deems it necessary to furnish the public with information with reference to the manner of its propagation, coupled with such suggestions concerning the best known methods of limiting

its progress as any person of average intelligence may easily put to practical use.

It should be generally understood that diphtheria is a contagious and infectious disease, which attacks by preference the young, and especially those whose vital resistance has been reduced by exposure to filth, uncleanness, the emanations from sewers, drains, and all unsanitary influences.

HOW DIPHTHERIA IS CONTRACTED.

The infectious substance of diphtheria is conveyed from the mouth, nose, air passages, and discharges from the bowels of those who have the disease. It is believed, with some reason, that the perspiration and urine may contain it. Domestic animals, such as cats, dogs, chickens, and tame pigeons, are credited with carrying the disease from one person to another, either by having the disease themselves, or because of having been handled by persons who were afflicted with it. It may be transmitted in water, milk, or other liquids, or in food or clothing, or by kissing a person who has a sore throat, without suspicion that it is diphtheria.

The secretions of the mouth and nose of a diphtheritic patient, mixed, as they must necessarily be, with the exudative deposit, are often allowed to fall upon the bedclothes and carpets, where they dry and remain for an indefinite length of time. These are liable to be detached by the friction of the fabric, or the shuffling of feet upon the floor, when the poison rises as dust in fine particles, and lodges in throat, nose, wind-pipe, or stomach of the person who may respire the air so contaminated.

Some persons have so much vital resistance to disease that it does not take root and develop. Others, however, have the susceptibility to its growth and fatal effects.

It should be remembered that a malignant form of the disease may be contracted from a person having it in a very mild form.

Exposure to an atmosphere contaminated by the body of a person who has died of diphtheria is extremely dangerous.

RULES AND PRECAUTIONS TO BE OBSERVED BY ALL WHO COME IN CONTACT WITH DIPHTHERIA.

1. Whenever diphtheria is known to be in the neighborhood, all children with sore throats should be kept apart from other children until a competent physician has determined that the sore throat is not diphtheria.

2. A person with diphtheria should be placed in a room in the upper story of the house, if convenient, as remote as possible from direct communication with others, and access should be denied to all but the necessary attendants. All superfluous furniture, including carpets,

curtains, clothing, and books, should be removed from the apartment. There should be free ventilation, without draughts.

3. A card with DIPHTHERIA printed in large type should be placed in a conspicuous position on the house, and no child should be allowed to enter.

4. No food or drink that has been exposed to the atmosphere of the sick-room should be used by well persons, and the dishes used in the sick-room should be washed separately.

5. Neither the bedclothes nor the patient's body linen should be mixed with other soiled clothes or admitted to the general wash until they are first disinfected.

6. No person recently recovered from diphtheria should attend school, church, or other public assemblies, until declared by a competent physician to be no longer capable of transmitting the contagion.

7. Under no circumstances should a public funeral be held of a person dead of diphtheria. Neither must children be permitted to attend. Upon this point health officials cannot be too firm and unyielding. All personal considerations and sentiment must be subordinated to considerations of public safety.

The importance of this course should be explained by the medical profession to clergymen of all denominations, and their influence and coöperation earnestly solicited, in order that the objections and prejudices of the careless and uninformed may be more easily overcome.

DISINFECTION.

As the discharges from the nose and throat are highly contagious, they should be received on cloths, which should be immediately burned. The urine, vomited matter, and discharges from the bowels should be received in a vessel containing a solution of chloride of lime in the proportion of six or eight or more tablespoonfuls in a gallon of soft water. They should be allowed to remain in this solution at least fifteen minutes before being deposited in a privy vault or water-closet.

DISINFECTION OF CLOTHING AND PREMISES.

The soiled linen, clothing, and towels should, if possible, be boiled in hot water for thirty minutes before leaving the room; but if this be inconvenient, a solution of sulphate of zinc (white vitriol) should be made by dissolving half a pound of the zinc with six tablespoonfuls of common table salt in a gallon of water, in which the clothes should be soaked two hours before being washed.

Some physicians may recommend solutions of sulphate of iron (green copperas) instead of a solution of chloride of lime, and a solution of corrosive sublimate or carbolic acid instead of sulphate of zinc.

It has been demonstrated, however, that copperas is not properly a *disinfectant*. It is an excellent antiseptic, arresting putrefactive decomposition, but it does not destroy the vitality of disease germs or the infecting power of materials containing them.

Corrosive sublimate solutions are poisonous, and when used should be kept in earthen, glass, or wooden vessels, and should invariably be labeled POISON.

Carbolic acid is also poisonous, and, like chloride of lime, is sometimes objectionable on account of its odor.

The chloride of lime solution for the secretions and dejections of the body, and the zinc solution for the clothes and linen, will, perhaps, be the most economical and easily obtained for general use, and will prove sufficient and satisfactory. The use of any of these agents must be determined by the attending physician.

The attendants should observe scrupulous cleanliness of hands and clothing. They should not appear in public until after having first changed their clothes and otherwise removed all possibility of carrying the contagion.

In case of death, let the body be wrapped in a sheet which has been soaked in the zinc solution, and encased in a tight coffin. The interment should be private, and in no case should the remains be exposed to view.

The room which has been occupied by the sick should, after death or recovery, be effectively disinfected.

Articles which cannot be washed or boiled should be exposed to dry heat at a temperature of 230° Fahrenheit for three or four hours, the articles being freely exposed and not folded or piled up. Otherwise, the room and its contents must be fumigated by the fumes of burning sulphur.

FUMIGATION WITH SULPHUR is performed by first closing doors and windows and all apertures through which the gas might escape. Then the floors, walls, and furniture must be thoroughly dampened. For a room ten feet square, three pounds of sulphur, in fragments, are placed in an iron pan supported by bricks placed in a tub containing a few inches of water. The sulphur is then moistened with alcohol and set on fire. When well ignited, shut the door and keep the room tightly closed several hours. When sufficiently fumigated, open the room freely to the air until thoroughly ventilated, when it will again be fit for occupancy.

In addition to these precautions the cellars, privies, water-closets, cesspools, drains, sewers, and all other probable sources of filth, should be cleansed and treated to a solution of copperas. Stagnant water should be drained. Let the sunshine into the rooms of the houses, and remember that pure water, pure air, and sunshine are the greatest natural preventives of contagious diseases.

These, in short, are the rules most generally adopted in the restriction of this destroyer of the young. They are as briefly stated as may be consistent with clearness, for there must be a comprehension of their scope and purport in order to exercise that influence and good which is the object to be attained.

Much more might be added, but this would lead to the consideration of medical subjects not deemed essential in directions for the guidance of the general public.

For information concerning the treatment of diphtheria it is necessary to look to the attending physician. He should supply you with this or some other pamphlet containing like information, which few busy practitioners have the leisure to verbally explain, and which few persons would be likely to remember.

The foregoing methods, modified by the attending physician to meet the exigency of the case, may be employed in all contagious diseases.

THE DANGERS ARISING FROM PUBLIC FUNERALS OF THOSE WHO HAVE DIED FROM CONTAGIOUS AND INFECTIOUS DISEASES.

The State Board of Health of California, realizing fully the benign influence of the reverend clergy of the State, and having a high appreciation of their functions as leaders and teachers of the people, would especially invoke their influence and coöperation in the instruction of the public in the principles of health and its preservation. Because of their general intelligence and widespread professional influence, they can exert greater *personal* influence than any other class or profession. Their visits are always missions of consolation and mercy. Unlike other professions, these duties are performed without fee or reward. There is thus engendered a confidential reverence for those so forgetful of self as to be ready at any and all times to speak words of hope, courage, and trust, when light has departed from the household and despair sits perched upon the family altar.

It may be superfluous to call the attention of so intelligent a class of men to a subject on which nearly all may have formed well-defined opinions; but having in mind the closeness of the pastoral relation to human life, the social standing of families, and the reciprocal feeling among friends and neighbors, it is deemed necessary to reinforce their convictions of what is proper to do, by the conversion of such convictions into custom and law.

The Board, therefore, respectfully asks the attention of ministers of all denominations and of every order to the practice of holding public funerals of persons who have died of contagious or infectious diseases. In many cities and towns there exists a municipal regulation or ordinance prohibiting a public or church funeral of any person who has died of Asiatic cholera, smallpox, typhus fever, diphtheria, yellow fever, scarlet fever, or measles, and directing the family of deceased to limit the attendance to as few as possible, and to take all precautions to prevent the exposure of other persons to contagion or infection. The person authorizing the public notice of death is also required to publish the name of the disease which caused the death of the person whose funeral is to be held. Where such local regulations are in force the clergy are relieved from the painful duty of refusal to perform such services.

Many amiable and otherwise well-informed people will importune the minister to officiate at a public funeral of a precious child that has died of diphtheria or scarlet fever. They cannot or will not understand that a compliance with the request endangers not only the lives of those present, but also the lives of the children of the kind pastor, who would not inflict pain by refusing, and of the children of sorrowing friends who inspect the remains in the casket, and follow them to the grave. It is to prevent such consequences that the suggestion is made that those of the clergy who live in cities and towns should so use their influence with the municipal authorities as to induce them to adopt an ordinance restraining any one from officiating at a public funeral in case of death from contagious diseases.

It is believed that considerations of personal and public safety need not be urged in support of the vital necessity of such action when addressing the clerical profession. If it were necessary to cite authorities to convince them that contagious diseases may be communicated by exhalations from the bodies of the dead, as well as by contact with living persons afflicted with the disease, they could be furnished without number. This would be the universal testimony of medical men. But it is considered unnecessary to furnish and multiply instances of infection and fatal results arising from public funerals in the case of contagious diseases. The principal thing is to refuse to hold such public services, no matter what the social standing of the family of deceased may be. Objections may arise to what at first may appear to be an extreme course. There is planted deep in the human heart a desire to honor the dead, and there are unfortunately many who think this can best be shown by a public funeral. They believe that to neglect public funeral rites is to manifest a lack of proper regard for the memory of the dead.

At this moment, when an atmosphere of sorrow and gloom pervades the home, considerations of safety for the living are apt to be received

with indifference and contempt. Whatever is said to the bereaved relatives at such a time, must be spoken with the utmost gentleness. But they must be instructed as to the duty of subordinating their wish to honor the dead, to the duty of preserving the health and lives of the living. It is believed that most persons will yield in this matter if properly advised. But if any are unreasonable, and insist upon public funeral rites with an apparent disregard for the safety of others, the police power of the municipality or the State should be invoked to teach such persons that it is a high moral duty to forego their preference, and to subordinate their individual desires that the welfare of the community may be conserved. Fortunately, in California, sanitary legislation has been such as to invest cities, towns, and sanitary districts with all the powers needed for the protection of their respective localities. But, as all know, such laws depend in a great measure upon public opinion for their enforcement. The sentiment of the community must be taken into account, and as the affairs of funerals have been almost entirely delegated to the church, ministers of the gospel stand in a position to explain to the people how it is possible to manifest proper and fitting respect for the dead without disregard for, and danger to, the living. Not only should it be explained that it may be contrary to law, but that it is also thoughtless and selfish for the members of one family to insist that persons from many other homes shall be subjected to the danger of infection, in order that a public funeral service may be held over the unconscious remains of one who can neither be benefited by it nor injured by its omission. The clerical and medical professions agree on all important questions relating to the preservation of human life and the betterment of humanity. It is certainly desirable that the two professions that have to deal with the hopes and fears, the joys and sorrows, the life and death of mankind, as an inseparable function of their office, should enjoy each other's confidence and earnest coöperation in any measure calculated to ameliorate the condition of the human race.

CONSTRUCTION AND VENTILATION OF SCHOOL BUILDINGS.

By HORACE COOK, ARCHITECT AND SUPERVISOR, PHILADELPHIA PUBLIC SCHOOLS.

Read before the State and Provincial Boards of Health.

MR. PRESIDENT AND GENTLEMEN: The facts which I present to you this afternoon are the results of my experience during the past fifteen years in the employ of the Board of Public Education in the city of Philadelphia, and while I have not had the pleasure of visiting the

different cities of this country to study the construction and hygienic conditions of their school buildings, I am satisfied that the same questions and difficulties of solving them confront the school architect, no matter for what part of the country he may be planning the building.

The title of this paper suggests three different phases of the subject, and I will speak of them in that order.

FIRST—PLAN AND CONSTRUCTION.

With us the plans of the various buildings differ but very little in their general features, and we are governed almost entirely by the amount appropriated for the building. These features are the classrooms, teachers' rooms, coat-rooms, halls, stairways, and fire-escapes.

The class-rooms are of a uniform size, excepting where the character of the lot compels a variation; they are 24 feet wide by 32 feet long by 13 feet high, making the cubical contents 9,984 cubic feet. For convenience in figuring we always speak of them as containing 10,000 cubic feet; as these rooms are always furnished with fifty desks, we have 200 cubic feet of air space to each pupil.

I have known these rooms where the building was overcrowded to have as many as ninety children in them at one time, but fortunately this is the exception and cannot be used as an argument to decrease the size of the rooms, as the organic matter soon becomes perceptible to the sense of smell. They are arranged in series of four or five and are divided by sliding partitions, made up of large doors hung at the top, which are very easily moved. These doors are paneled at the top and bottom, and the center is filled in with double-faced slate, thus furnishing blackboards for each of the two rooms that they divide when they are out in position.

This is a distinctive feature of the Philadelphia school building, and to my mind a very good one, for by simply pushing these doors back into a pocket between the coat-rooms, you turn four or five separate rooms into one large one that may be used for assembly or lecture purposes.

The lighting of the class-room is a very important matter, and it seems to be the consensus of opinion of the medical profession that the ratio should be about one foot of glass surface to five feet of floor surface, which rates we take as our guide in laying out the windows. In many of our rooms, however, we have as high as one to four.

I do not think it is possible to provide too much light, as it is a very easy matter to cut it down by means of shades or inside shutters, while it is impossible to increase it after the building has been completed.

In every building there is provided on each floor for the teachers two rooms, one fitted up as a toilet-room, the other as a library or dining-room. These rooms have generally been about 16 feet square, but as a

few of them are used as class-rooms in overcrowded buildings we have reduced them in size to about 12 feet square.

Each class-room is provided with a separate coat-room of sufficient size to provide ample accommodation for the hats and coats of the pupils using the class-room, and is so arranged that in entering the class-room you may pass direct or go into the coat-room and from there to the class-room.

The hall in our buildings is a distinctive feature, and extends the full length of the building. The class and coat-rooms are on one side and the stairway and fire-escape on the other, with several windows to give light. At the ends of the hall there is usually a class-room on each side.

The stairways are always large, and are built with treads of 11 inches and risers of 7 inches, making them very much easier than the ordinary stairs.

The fire-escape has heretofore been built of brick and stone, but owing to a disposition to economize, I have planned the last buildings with an iron one, which is the same as the inside stairways, except that it is built of metal and is entirely open.

The construction of the buildings is of the very best, both as to workmanship and materials; and this I think is as it should be, for I have always thought that public work should be an example in this respect. Then, again, it is far the cheapest in the end, as the cost for repairs is reduced to a minimum.

SECOND—HYGIENIC ARRANGEMENTS.

For the convenience of the teachers, in the toilet-room on each floor there are placed a water-closet and a washstand. The closet is a flushing one of the highest grade, and the washstand is provided with hot and cold water. A similar arrangement is placed in the cellar for the use of the janitor. In the hall on each floor is placed a tap and large sink for the use of the pupils, to enable them to get water without going outside of the building.

One of the most troublesome questions in connection with the planning of a school building, and one that requires the most careful consideration, is the proper arrangement and kind of toilet facilities for the pupils. I think we can show you in Philadelphia examples of every known means for the disposal of fecal matter, from the original cess-pool to the modern flushing range, including the crematory and dry closet, and in my estimation the absolutely perfect system is yet to be devised.

The cesspool we are still compelled to use in the outlying districts where there are no sewers.

The dry closet was represented to be the most perfect method that had yet been invented for the disposal of waste matter, as by this means it would be dried so thoroughly that all that was necessary was to touch a match to it and it would be completely consumed, leaving nothing but a few ashes, which could be thrown into the ash heap. In practice, however, we have found it far from what was anticipated, and its use has been entirely abandoned.

The crematory was introduced in two of our buildings, but was found so objectionable that it has been removed from one of them, and I expect it will be necessary to take it from the other before very long.

Flushing ranges have been placed in the buildings erected last year and called for in those now under contract. This is an improvement on the dry closet, and would, I think, be entirely satisfactory were it possible to keep the water-closet rooms warm at all times; but this is impossible, as it would be necessary to have the janitor at the building night and day to maintain the heat.

Last winter there were sent to the officers constant complaints of their freezing up, and as it is not always possible to obtain the services of a plumber when you want him, there was often delay in getting them into operation.

For these reasons their use has been abandoned, and we have gone back to the use of a latrine that we designed some years ago. This latrine is the result of our own experience in replacing the cesspool in old schools with a flushing arrangement connected with the sewers.

Many of our outbuildings being too good to be torn down, we therefore filled the wells with dirt, covered them with flagstone, and built a trough under the seats with brick sides and bottom, plastering the exposed sides with cement, thus forming a large tank or cistern, which was provided with an outlet and overflow connected with the sewer, allowing for a depth of about two feet of water when the outlet was closed. When the outlet was opened the water ran out with a rush, carrying with it any filth that had accumulated. This idea worked very satisfactorily for a few years, or until the cement and brick walls commenced to crack from different causes, making places for the leakage of water which we found almost impossible to stop. It was then suggested that we have a large tank made of cast-iron and place it in the bottom of these troughs and see how that would answer. This we did, and have been using them with a great deal of satisfaction for many years. These tanks vary in size from single ones 16 inches wide, 2 feet deep, and 6 feet long, to double ones 26 inches wide, 2 feet deep, and 10 feet long. We use some single ones as long as 16 feet. These tanks we place about 2 feet below the floor level, so that the water will not freeze, connecting the bottom of one end with the drain pipe, and placing a water discharge pipe at the top of the other end to provide a continuous flow of water when wanted and to wash it out when empty.

In planning the last new buildings, contracts for which have just been awarded, I used three of the largest sizes of these latrines, placing two of them in the girls' closet and one in the boys'. I have arranged to ventilate them by running a 10-inch terra-cotta pipe from the top of one end of each latrine to a vent shaft which is built alongside of the large smoke flues for the boilers. To insure a draught when the boilers are not running, a fire is to be kept in a small heater built in the wall at the base of the vent flue. The brick sides of the trough above the latrines are to be cemented and the riser from the floor to seat is to be slate. The urinal in the boys' closet has been made of cement, with water running over it when it is in use. We have been trying to ventilate these urinals by means of a trough connecting with the vent shaft built in front of the urinal trough and covered with cast-iron plates. This has not been altogether satisfactory, and I have designed a new one which I propose trying. This will be built with slate slabs placed about 6 inches from the wall, resting at the bottom on brackets and securely braced in position, the bottom of these slabs to come about 4 inches above the trough. The top will be covered with plates with 3-inch holes in them, in which will be placed galvanized sheet iron pipes, connecting with a larger pipe connected to the vent flue, a perforated pipe to be run along the top of the urinal to provide water, which will be kept running at all times while the urinal is in use. My idea is that all odors will be drawn down to the urinal trough, pass up back of the slate slabs, and be carried off by the pipes that are connected to the vent shaft.

In all our later buildings the water-closets have been built adjoining the main building, or so close to it that the children can pass from one to the other without being exposed to the weather. In my opinion this is a mistake, and if I could I would place them at a reasonable distance from the building with a covered passageway leading from the main building to the privies, for I find that even in our best ventilated closets at times there are odors that are very objectionable, and the only way to be free from them is to have the closets as far away as is practicable.

THIRD—HEATING AND VENTILATION.

This, to my mind, is the most important question that is to be met in the planning of a school building, and one upon which you will meet the greatest diversity of opinion.

In no locality has there been more progress in this respect than in Philadelphia, for from the large fifteen class-room building heated by seven hot-air furnaces with a change of air in each class-room once in every sixty minutes, we have tried nearly every method to the present one, where we have two large steam boilers and change the air in each class-room by means of a blower once in every seven minutes.

In the early system each tier of three rooms was heated by a hot-air furnace and the ventilation obtained by means of a large stack on the opposite side of the room from the heat register, with two openings in each room—one at the floor, the other at the ceiling. An artificial draught was created in the stack by placing a large cast-iron pipe in its center, which answered as a smoke flue for the furnaces.

This was fairly satisfactory at the time, the great objection being the number of fires to be cared for and the amount of work they entailed. This no doubt is the cheapest system that can be used both as to cost of installation and amount of fuel consumed, averaging sixty-two tons per year for three years, which not only included the heating of the classrooms, but also the warming of the teachers' rooms and halls.

The next step forward was the substitution of a steam boiler for the several hot-air furnaces, with a nest of indirect radiators at the base of each heat flue drawing fresh air from the outside through an independent pipe, and direct radiators in the more exposed rooms to be used in the severest weather, a steam coil being placed in each vent shaft to create a draught. This was found to be a great improvement on the hot-air furnaces so far as the heating went, but no improvement as regards ventilation, and it was suggested that the only way positive ventilation could be obtained would be by adopting some means to force the heated air into the rooms. After this had been considered for some time it was finally decided to try a system of heating and ventilation based on this idea in the next building. The air was heated by means of a large fan blowing the air through a heater composed of a number of steam radiators, so arranged that the exhaust steam from the engine driving the fan could be used for heating, and only in the extreme cold weather would live steam direct from the boilers have to be supplied to the radiators.

We have found this system entirely satisfactory, not only being efficient, but also exceedingly economical, considering the work done.

In the buildings heated by this means we find it possible, starting at half-past seven o'clock in the morning, to raise the temperature of the building by nine o'clock to 70° , the temperature of the building at the commencement being 10° to 20° , or the temperature of the outside air.

The ventilation is positive, and the air is changed in each class-room every seven minutes. To prove this we introduced thick smoke into one of these rooms from the register and watched the result. The smoke spread itself over the top of the room, first going directly across from the register side to the window side (the registers always being placed on the inner wall), then gradually settled to the floor and passed out through the vent openings at the floor line.

Very soon after adopting the gravity system of steam heating the location of the vent flues was changed, and instead of placing them on

the outside walls, they were put on the inner walls on each side of the heat flue; at the same time the ventilating register at the ceiling was omitted, as its use was found to be of no benefit.

The size of the heat flue has a great deal to do with the successful heating of a building, especially where power is used. We have gradually increased the size from 12 x 20 inches to 16 x 30 inches, and by this means are enabled to introduce a large volume of air into the classroom without creating any very noticeable draughts. To further prevent these, the heat registers are placed seven feet above the floor, the air thus passing over the heads of the pupils.

The two boilers are used with a view to economy, as it is possible to do all the work required in ordinary weather with one boiler, and the second boiler is only started up when it is very cold. Then, again, if anything happens to one boiler it is not absolutely necessary to close the school while the repairs are being made to it.

We find the consumption of fuel in the buildings heated by the gravity and induction systems to be nearly the same, averaging about one hundred and twenty-five tons for a building containing fifteen standard class-rooms. When I first found this out I was greatly surprised, for one would think that where you are forcing such a quantity of air into a room it would require much more fuel than where the change is one third as fast.

Another interesting comparison that we made as to the respective merits and cost of two systems of heating is that between a twenty-one division building heated by the air-induction system, and a twenty-one division building heated by the Smead Wills system; this was figured out from the coal consumption during the winter of 1898 and 1899.

In the building heated by the air-induction system we found we were delivering thirty cubic feet of air per minute for each occupant, with a consumption during the winter of 165 tons of pea coal, costing \$3.30 per ton, or a total cost of \$544.

In the building heated by the Smead Wills system, we found we were delivering ten cubic feet of air per minute for each occupant, with a consumption of 190 tons of nut coal, costing \$5 per ton, or a total cost of \$950; showing a difference of \$406 in the cost of fuel in favor of the blower system for heating two buildings to all intents and purposes of exactly the same size, besides delivering three times as much fresh air per minute to each occupant.

The item of maintenance of one of these power plants has been so small that I am unable to give the exact percentage, but am sure that, taking all of the plants we have installed up to the present time, this has amounted to less than one per cent of the original cost per year. Of course, there will come a time when extensive repairs will be required, and when they are made no doubt they may run up to as much as one fifth of the first cost.

This first cost of an induction system for a building containing twenty-one class-rooms is about \$8,000, and for a gravity system about one third less. These prices are based upon bids that were received two weeks ago for two new buildings, containing twenty-one class-rooms each.

For the purpose of purifying the air as much as possible, about a month ago we constructed an air filter between the fan and the outside openings. This has been in operation long enough for us to determine its value, and we have found it so satisfactory that we propose placing them in all the buildings heated by the induction system.

This filter is very simple in its construction, consisting of a succession of light wooden frames covered with fine cheese cloth and so arranged that they are easily taken down to clean. We have made the area of the cheese cloth about ten times greater than the outside openings, and yet find there is a loss of about eight per cent in the volume of air delivered to each room per minute, running the blower at the same speed as before the screens were placed in position.

The next step that will be necessary to make this induction system absolutely perfect is the adoption of some cheap means of cooling the air in warm weather. We find to insure ventilation when we do not need any heat, that we must run the blower just the same, and that the temperature of the class-rooms rises from 5° to 10° above that of the outside air. This is too great a difference when the thermometer is up in the nineties, as very frequently occurs in May, June, and September. The solution of this problem confronts me at the present time, as to insure the perfect working of this system at all times, the class-rooms must be kept practically sealed, for the raising of a window or the opening of a door interferes with the result.

In conclusion, I would ask my hearers to excuse the rambling sort of way in which I have treated this subject, but there are so many phases of it, any one of which is worthy of special consideration, that I thought it better to give a general outline of several than confine myself to a single one, and if I have produced any new facts or made any suggestions that will be of any use to you I shall feel more than repaid.

SANITARY LAWS OF THE STATE OF CALIFORNIA.

POLITICAL CODE.

PART III—Of the Government of the State.

TITLE VII—General Police of the State.

CHAPTER I.

IMMIGRATION.

- SECTION 2952. Lepers, lazarettos for.
2955. Examination and disposition of lepers. Fees.
2959. Fines and penalties, lien on vessel.
2960. Other commutations.
2962. Certain vessels exempted.
2966. Ex officio Commissioners.
2968. Bond of Commissioner.

SEC. 2952. It shall not be lawful for lepers, or persons affected with leprosy or elephantiasis, to live in ordinary intercourse with the population of this State; but all such persons shall be compelled to inhabit such lazarettos or lepers' quarters as may be assigned to them by the Board of Supervisors of the city or county in which they shall be domiciled or settled; and the Board of Supervisors are vested with power and are required to make all necessary provisions for the separation, detention, and care of lepers, or persons affected with leprosy or elephantiasis, settled or domiciled in their respective cities or counties. The superintendent or manager of all lepers' quarters under this chapter shall forward quarterly statements, showing the name, age, sex, and birthplace of each leper in such quarter, to the Secretary of State, who shall keep a proper record of such matters for the information of the public. [In effect March 25, 1876.]

SEC. 2955. The Commissioner of Immigration must satisfy himself whether or not any person who shall arrive in this State by vessel from any foreign port or place is a leper, or affected with the disease known as leprosy or elephantiasis, before such person shall mingle with the population of this State. For the purpose of ascertaining said fact the Commissioner is vested with the power and authority to detain all such persons on board any such vessel so arriving, and to assign the vessel

to a berth or anchorage separate and apart from other vessels, and at a safe and suitable distance from the shore, if in his judgment it shall be necessary, until such fact can be fully ascertained by him. Such fact shall be ascertained by personal inspection and examination of each and every person on board such vessel; and the Commissioner of Immigration is authorized, empowered, and required to make such personal inspection and examination of all persons so arriving by any such vessel, the same to be made at such berth or anchorage as he shall, in his discretion, assign to such vessel for that purpose, and shall be made before the landing of any person thereupon. All of such persons who, upon inspection and examination, are found to be lepers, or affected with the disease known as leprosy or elephantiasis, shall be taken in charge by the Commissioner of Immigration, and placed in a suitable lazaretto, or lepers' quarters, to be provided or designated by the Board of Supervisors, whenever necessary for that purpose, as hereinbefore prescribed, and there detained and properly cared for, separate and apart from the general population of this State, so long as they, the said lepers, shall elect to remain in the State of California, or until they shall have recovered from said disease, and no longer. All of such persons as shall be found to be free from said disease shall be allowed to depart and go at their will, without unnecessary detention or delay, and shall be entitled to receive a certificate of the fact of their freedom from said disease from said Commissioner. For his services in making such examination and inspection the Commissioner of Immigration shall demand and collect from the master, owner, or consignee of such vessel the sum of seventy cents, in United States gold or silver coin, for each and every person so examined or inspected, which sum, except four thousand dollars a year and expenses of office, shall, when required for such purpose, be paid by the Commissioner into the State Treasury, to be used in the maintenance, when necessary, of such lazarettos or lepers' quarters as shall be constructed under this law. Any master, owner, or consignee of any vessel arriving at any port of this State who shall fail or refuse to perform, or permit the performance of, any of the acts or things required by this chapter, or to take and occupy with his vessel the berth or anchorage assigned for the same by the Commissioner, pending the examination and inspection herein provided for, or who shall permit or allow any person arriving in such vessel to depart therefrom, and to communicate, mingle, or associate with the population of this State, or any part thereof, until after such examination and inspection by the Commissioner is had, shall, for every such act or omission, forfeit to the Commissioner of Immigration the sum of one thousand dollars in United States gold coin, to be sued for and recovered by suit in any court of competent jurisdiction, and to be applied in like manner with the fees. And any master, owner, or consignee of

any such vessel so arriving, who shall refuse or neglect to pay, or cause to be paid to said Commissioner, the fee of seventy cents for the examination and inspection of each and every person so arriving in such vessel, shall forfeit to said Commissioner, for each case, the sum of five hundred dollars in United States gold coin, to be recovered and applied as above. And the Commissioner shall have a lien upon the vessel, and the same shall be sold to pay any judgment recovered under this Act. The Commissioner shall have the power to call in the aid of the Sheriff and all police authorities to assist in enforcing this law. And he may appoint one or more deputies under him, who shall be vested with all the powers of the Commissioner, and may discharge his official duties when required by him. The Commissioner of Immigration must prepare and submit to the Secretary of State quarterly statements, certified under his hand and seal, showing the name, age, sex, birthplace, and present residence of every leper, or person affected with leprosy or elephantiasis, examined or inspected by him, as well as any other information or fact touching the character and prevalence of said disease within his knowledge. [In effect March 25, 1876.]

SEC. 2959. For all fines and penalties imposed by this chapter upon any master or commander, owner or consignee, for any omission, neglect, or refusal to perform any act or duty required by this chapter, such vessel is liable; and the amount of such fines or penalties are a lien upon such vessel, and have priority over all other liens, except those for seamen's wages, bottomry bonds and respondentia. Such penalties and fines may be sued for and recovered in a civil action, with costs of suit, by the Commissioner, or by his authorized attorney, in the name of the people of the State of California, in any court having cognizance thereof, and when recovered must, after deducting the expenses, be paid into the State Treasury.

SEC. 2960. The Commissioner may compound or commute, for any of the penalties or fines, upon such terms as he thinks proper, and at the end of every month report to the Controller of State the reasons and causes of such compounding or commutation. * * *

SEC. 2962. Masters of vessels arriving at any of the ports of this State from any port in this State, or from Oregon or Washington Territory, are exempt from making the statement required by this chapter, when the vessels in which they arrive have not taken on board at their port of departure, or at any intermediate port, any alien passenger, to be landed at the port of arrival; and masters of vessels arriving from Panama are also exempted from the provisions of this chapter, when they have not landed, or are not about to land, passengers who took their departure from ports other than the port of New York; and in no case must such master be required to report any passenger other than way passengers taken on board between the port of New York and the port of arrival in this State.

SEC. 2963. The consuls, ministers, agents, or other public functionaries of any foreign Government, arriving in this State in their official capacity, are exempt from the provisions of this chapter.

SEC. 2964. The Commissioner of Immigration must approve all bonds and administer all oaths required in the discharge of his duties. Whenever it appears that the master or commander of any vessel has not made a full and correct report, as provided by this chapter, the Commissioner must inquire into the same, and for that purpose may require the attendance of witnesses before him in the same manner as Notaries Public may in civil cases. Testimony so taken may be read as evidence on the trial of any action commenced for any penalty or forfeiture accruing under the provisions of this chapter in the same manner, and with like effect, as if regularly taken in such action.

SEC. 2966. In all the ports in this State, other than San Francisco, the Mayor or chief municipal officer at such port, or if there be none such, then the Sheriff of that county, is *ex officio* Commissioner of Immigration for such port, and in carrying out the provisions of this chapter, and has all the powers and is liable to all the penalties provided herein.

SEC. 2968. The Commissioner of Immigration for the port of San Francisco must execute an official bond in the sum of twenty-five hundred dollars. [In effect March 25, 1876.]

CHAPTER II.

PRESERVATION OF PUBLIC HEALTH.

ARTICLE I. STATE BOARD OF HEALTH.

II. VACCINE AGENT.

III. HEALTH AND QUARANTINE REGULATIONS FOR THE CITY AND HARBOR OF SAN FRANCISCO.

IV. HEALTH REGULATIONS FOR THE CITY OF SACRAMENTO.

V. HEALTH AND QUARANTINE OF OTHER CITIES, TOWNS, AND HARBORS.

ARTICLE I.

STATE BOARD OF HEALTH.

SECTION 2978. Who constitute the State Board.

2979. Duties of.

2980. To report as to the effect of intoxicating liquors.

2981. Meetings, and election of officers.

2982. Duties of Secretary. Salary of Secretary.

2983. Expenses of, limited.

SEC. 2978. The State Board of Health consists of seven physicians—two of the City of Sacramento, and five from other portions of the State—appointed by the Governor for the term of four years.

SEC. 2979. The State Board of Health must place themselves in communication with the local Boards of Health, hospitals, asylums, and

public institutions throughout the State, and take cognizance of the interests of health and life among the citizens generally. They must make sanitary investigations and inquiries respecting the causes of disease, especially of epidemics, the source of mortality, and the effects of localities, employments, conditions, and circumstances on the public health, and gather such information in respect to these matters as they may deem proper for diffusion among the people. They may devise some scheme whereby medical and vital statistics of sanitary value can be obtained, and act as an advisory board to the State in all hygienic and medical matters, especially such as relate to the location, construction, sewerage, and administration of prisons, hospitals, asylums, and other public institutions. They must, at each biennial session of the Legislature, make a report, with such suggestions as to legislative action as they deem proper.

SEC. 2980. The Board must examine into and report what, in their best judgment, is the effect of the use of intoxicating liquor as a beverage upon the industry, prosperity, happiness, health, and lives of the citizens of the State; also, what legislation, if any, is necessary in the premises.

SEC. 2981. The Board must meet at the capital of the State, at least once in every three months. They must elect from their own number a President and a Permanent Secretary; the latter must reside at the capital, and is their executive officer. No member, except the Secretary, receives any compensation; but the actual traveling expenses of the members, while engaged in the duties of the Board, are allowed, and paid out of the General Fund.

SEC. 2982. The Secretary must superintend the work and perform such other duties as the Board may require. He must furnish the Legislature, when in session, such information cognate to this chapter as, from time to time, may be necessary. An annual salary of twenty-five hundred dollars, and his office and other necessary expenses incurred in the performance of his duties, must be paid to him in the same manner as salaries of State officers are paid.

SEC. 2983. The expenses of the Board, including the salary of the Secretary, must not exceed four thousand dollars per annum.

ARTICLE II.

VACCINE AGENT.

SECTION 2993. Agent to obtain genuine vaccine matter.

2994. Compensation and duty of.

SEC. 2993. The Vaccine Agent must obtain a supply of the genuine vaccine matter, and preserve the same for the use and benefit of the citizens of the State. [Basis of article: Stats. 1852, p. 138.]

SEC. 2994. Such agent must furnish genuine vaccine matter, approved by the State Board of Health, to any regular practicing physician in good standing in his profession in this State. He may charge and receive for every parcel of vaccine matter furnished, the sum of five dollars, which is full compensation for his services and expenses.

ARTICLE III.*

HEALTH AND QUARANTINE REGULATIONS FOR THE CITY AND HARBOR OF SAN FRANCISCO.

- SECTION 3004. Quarantine grounds, location of.
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 3006. Mayor ex officio President. Time of meeting.
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 3033. Vacation of infected and dangerous houses.
 3034. Physicians to report infectious diseases.
 3035. Board of Health to have charge of cemetery.

SEC. 3004. The quarantine grounds of the bay and harbor of San Francisco are at the anchorage of Sausalito.

SEC. 3005. The Board of Health of the City and County of San Francisco consists of the Mayor of the city and county and four physicians in good standing, residing in the City and County of San Francisco, appointed by the Governor, and holding their offices for the term of five years.

SEC. 3006. The Mayor is ex officio President of the Board. The Board must meet monthly, and at such other times as the President may direct. In the absence of the President, the Board may elect a Chairman, who is clothed with the same powers as the President.

* Superseded by San Francisco Charter.

SEC. 3007. The Health Officer for the City and County and Port of San Francisco is elected by the Board of Health, and holds office at its pleasure. He must be a graduate of some medical college, in good standing, and must reside within the city limits of San Francisco.

SEC. 3008. The Health Officer is the executive officer of the Health Department, and he may, in his discretion, cause the removal to a hospital of any and all persons within the limits of the City and County of San Francisco, infected with variola. [In effect March 9, 1878.]

SEC. 3009. The Board of Health must appoint a Quarantine Officer, who shall be a physician in good standing; a Secretary, one Assistant Secretary, six Health Inspectors, one Market Inspector, and one Messenger, whose duties must be fixed by the Board of Health. They must also appoint one Superintendent Physician, one Resident Physician, one Steward, one Matron, one Apothecary; two Visiting Physicians, two Visiting Surgeons, as officers of the City and County Hospital, in and for the City and County of San Francisco; one each of said Visiting Physicians and Surgeons to be nominated by the Faculty of the Medical Department of the University of California, and one each of said Visiting Physicians and Surgeons to be nominated by the Medical College of the Pacific. Said Board may also appoint one Engineer for the City and County Hospital. They may also appoint one Superintendent, one Resident Physician, one Matron, and such other employés as are now authorized by law, to be employed in and for the Almshouse of said city and county. They shall also have power to appoint and prescribe the duties of one City Physician and one Assistant City Physician, who shall be designated as Police Surgeons, and whose duty it shall be to make all autopsies required of them by the Coroner of said city and county. And said Board is also empowered to appoint such employés and such medical attendants as they may deem necessary in the Health Department, and in all the various institutions which are by law placed under their supervision; and the compensation of such employés and medical attendants shall be fixed by the Board of Health. The appointing power aforesaid is vested solely in said Board of Health, and said Board shall have power to prescribe the duties of said appointees, and shall not remove the same without just cause. The heads of departments appointed by the Board of Health, to wit: the Health Officer, Resident Physician of City and County Hospital, and Superintendent of Almshouse, shall not be removed except by a concurrence of four members of said Board of Health.

SEC. 3010. The following annual salaries are hereby allowed to the officers of the Health Department, and such other officers and employés as are mentioned in the preceding section, viz: Health Officer, three thousand dollars; Quarantine Officer, eighteen hundred dollars; Secretary,

two thousand one hundred dollars; Assistant Secretary, one thousand two hundred dollars; Health Inspectors, one thousand two hundred dollars each; Market Inspector, one thousand two hundred dollars; Messenger, nine hundred dollars; City Physician, one thousand eight hundred dollars; Assistant City Physician, one thousand two hundred dollars; all of said salaries, together with the salaries of such other employés of the Health Department as may be appointed by the Board of Health, must be paid in equal monthly installments out of the General Fund of the City and County of San Francisco, in the same manner as the salaries of the other officers of said city and county are paid. There shall be paid to the officers and employés of the City and County Hospital and Almshouse the following annual salaries, viz: Superintendent Physician, two thousand four hundred dollars; Resident Physician, one thousand five hundred dollars; Steward, one thousand five hundred dollars; Matron, seven hundred and twenty dollars; one Apothecary, one thousand two hundred dollars; Visiting Physicians and Surgeons, one thousand two hundred dollars each; Engineer, one thousand two hundred dollars; Superintendent of Almshouse, two thousand four hundred dollars; Matron of Almshouse, seven hundred and twenty dollars; and all other medical attendants and employés of said institutions are to be paid such sums as may authorized by law, and as provided in the preceding section; all to be paid in equal monthly installments, out of the Hospital and Almshouse Fund of said City and County of San Francisco; and the Auditor of said city and county is hereby directed to audit the said demands, payable out of the funds aforesaid, upon the approval of the same by the said Board of Health, and also to audit all demands for salaries of medical attendants and employés appointed by the Board of Health in accordance with this chapter, for the amounts authorized to be paid, when the same shall have been approved by said Board; and the Treasurer of said city and county must pay said demands out of said funds. The Clerk of the Mayor of the City and County of San Francisco shall not receive any compensation as Clerk of the Board of Health. [In effect March 9, 1878.]

Sec. 3011. The Health Officer, in addition to his salary, receives such sums for the necessary expenses of his office as the Board of Health may direct, and the Auditor must audit and the Treasurer pay such sums out of the General Fund. The Board of Supervisors must provide proper offices for the Health Department.

Sec. 3012. The Board of Health have general supervision of all matters appertaining to the sanitary condition of the city and county, including the City and County Hospital, the County Jail, Almshouse, Industrial School, and all public health institutions provided by the City and County of San Francisco; and may adopt such orders and

regulations, and appoint or discharge such medical attendants and employes as to them seems best to promote the public welfare; and may appoint as many Health Inspectors as they deem necessary in time of epidemics.

SEC. 3013. Shipmasters bringing vessels into the harbor of San Francisco, and masters, owners, or consignees having vessels in the harbor which have on board any cases of Asiatic cholera, smallpox, yellow, typhus, or ship fever, must report the same, in writing, to the Quarantine Officer before landing any passengers, casting anchor, or coming to any wharf, or as soon thereafter as they, or either of them, become aware of the existence of either of the diseases on board of their vessels. [In effect March 9, 1878.]

SEC. 3014. No captain or other officer in command of any vessel sailing under a register arriving at the port of San Francisco, nor any owner, consignee, agent, or other person, having charge of such vessel, must, under a penalty of not less than one hundred dollars, nor more than one thousand dollars, land, or permit to be landed, any freight, passengers, or other persons from such vessel until he has reported to the Quarantine Officer, presented his bill of health, and received a permit from that officer to land freight, passengers, or other persons. [In effect March 9, 1878.]

SEC. 3015. Every pilot who conducts into the port of San Francisco any vessel subject to quarantine, or examination by the Quarantine Officer, must—

First—Bring the vessel no nearer the city than is allowed by law;

Second—Prevent any person from leaving and any communication being made with the vessel under his charge until the Quarantine Officer has boarded her and given the necessary orders and directions;

Third—Be vigilant in preventing any violation of the quarantine laws, and report without delay all such violations that come to his knowledge to the Quarantine Officer;

Fourth—Present the master of the vessel with a printed copy of the quarantine laws, unless he has one;

Fifth—If the vessel is subject to quarantine, by reason of infection, place at the mast-head a small yellow flag. [In effect March 9, 1878.]

SEC. 3016. Every master of a vessel subject to quarantine or visitation by the Quarantine Officer, arriving in the port of San Francisco, who refuses or neglects, either—

First—To proceed with and anchor his vessel at the place assigned for quarantine, when legally directed so to do; or,

Second—To submit his vessel, cargo, and passengers to the Quarantine Officer, and furnish all necessary information, to enable that officer to determine what quarantine or other regulations they ought, respectively, to be subject; or,

Third—To report all cases of disease and of deaths occurring on his vessel, and to comply with all the sanitary regulations of the bay and harbor—

Is liable in the sum of five hundred dollars for every such neglect or refusal. [In effect March 9, 1878.]

SEC. 3017. All vessels arriving off the port of San Francisco from ports which have been legally declared infected ports, and all vessels arriving from ports where there is prevailing, at the time of their departure, any contagious, infectious, or pestilential diseases, or vessels with decaying cargoes, or which have unusually foul or offensive holds, are subject to quarantine, and must be, by the master, owner, pilot, or consignee, reported to the Quarantine Officer without delay. No such vessel must cross a right line drawn from Meiggs Wharf to Alcatraz Island until the Quarantine Officer has boarded her and given the order required by law. [In effect March 9, 1878.]

SEC. 3018. The Quarantine Officer must board every vessel subject to quarantine or visitation by him, immediately on her arrival, make such examination and inspection of vessel, books, papers, or cargo, or of persons on board, under oath, as he may judge expedient, and determine whether the vessel should be ordered to quarantine; and, if so, the period of quarantine. [In effect March 9, 1878.]

SEC. 3019. No captain or other officer in command of any passenger-carrying vessel of more than one hundred and fifty tons burden, nor of any vessel of more than one hundred and fifty tons burden having passengers on board, nor any owner, consignee, or other person having charge of such vessel or vessels, must, under a penalty of not less than one hundred dollars, nor more than one thousand dollars, land or permit to be landed any passenger from the vessel, until he has presented his bill of health to the Quarantine Officer, and received a permit from that officer to land such passengers, except in such cases as the Quarantine Officer deems it safe to give the permit before seeing the bill of health. [In effect March 9, 1878.]

SEC. 3020. The following fees may be collected by the Quarantine Officer: For giving a permit to land freight or passengers, or both, from any sailing vessel of less than five hundred tons burden from any port out of this State, two dollars and fifty cents; over five hundred and under one thousand tons burden, five dollars; each additional one thousand tons burden, or fraction thereof, an additional two dollars and fifty cents. For steam vessels propelled in whole or in part by steam, of one thousand tons burden or less, five dollars, and two dollars and fifty cents for each additional one thousand tons burden, or fraction thereof; but vessels not propelled in whole or in part by steam, sailing to and from any port or ports of the Pacific States of the United States or Territories, and whaling vessels entering the harbor of San Francisco, are excepted from the provisions of this section. [In effect March 9, 1878.]

SEC. 3021. The Board of Health may enforce compulsory vaccination on passengers in infected ships, or coming from infected ports.

SEC. 3022. The Board of Health may provide suitable hospitals, to be situated at or near Sausalito, and furnish and supply the same with nurses and attachés, and remove thereto all persons afflicted with cholera, smallpox, yellow, typhus, or ship fever.

SEC. 3023. The Health Officer must keep a record of all births, deaths, and interments occurring in the City and County of San Francisco. Such records, when filed, must be deposited in the office of the County Recorder, and produced when required for public inspection.

SEC. 3024. Physicians and midwives must, on or before the fourth day of each month, make a return to the Health Officer of all births, deaths, and the number of still-born children occurring in their practice during the preceding month. In the absence of such attendants, the parent must make such report within thirty days after the birth of the child. Such returns must be made in accordance with rules adopted, and upon blanks furnished by the Board of Health. [In effect March 9, 1878.]

SEC. 3025. No person shall deposit in any cemetery, or inter in the City and County of San Francisco, any human body without first having obtained and filed with the Health Officer a certificate signed by a physician or midwife, or a Coroner, setting forth, as near as possible, the name, age, color, sex, place of birth, occupation, date, locality, and cause of death of the deceased, and obtain from such Health Officer a permit; nor shall any human body be removed or disinterred without the permit of the Health Officer, or by order of the Coroner. Physicians, when deaths occur in their practice, must give the certificate herein mentioned. Hereafter it shall be the duty of the Assistant City Physician or Police Surgeons to perform all autopsies which may be required in the Coroner's office of the City and County of San Francisco, all such autopsies being made without charge to the city. It shall be the duty of the Health Officer to see that the dead body of a human being is not allowed to remain in any public receiving vault for a longer period than five days. At the expiration of that time he shall cause the body to be placed in a vault or niche constructed of brick, stone, or iron, and hermetically sealed. It shall also be his duty to require all persons having in charge the digging of graves and burial of the dead, to see that the body of no human being who had reached ten years of age shall be interred in a grave less than six feet deep, or if under the age of ten years, the grave to be not less than five feet deep. [In effect March 9, 1878.]

SEC. 3026. Superintendents of cemeteries within the boundaries of the City and County of San Francisco must return to the Health Officer, on each Monday, the names of all persons interred or deposited

within their respective cemeteries for the preceding week. [In effect March 9, 1878.]

SEC. 3027. No Superintendent of a cemetery can remove or cause to be removed, disinter or cause to be disinterred, any corpse that has been deposited in the cemetery, without a permit from the Health Officer, or by order of the Coroner.

SEC. 3028. Whenever a nuisance shall exist on the property of any non-resident, or any property, the owner or owners of which cannot be found by the Health Inspector after diligent search, or on the property of any owner or owners upon whom due notice may have been served, and who shall for three days refuse or neglect to abate the same, or on any city property, it shall be the duty of the Board of Health to cause the said nuisance to be at once removed or abated, and to draw upon the General Fund for such sums as may be required for its removal or abatement, not to exceed two hundred dollars; *provided*, that whenever a larger expenditure is found necessary to be made for the removal or suppression of any nuisance, the Board of Supervisors of said city and county shall, upon the written application of the Board of Health, by ordinance, appropriate, allow, and order paid out of the General Fund, such sum or sums as may be necessary for that purpose; and the Auditor shall audit, and the Treasurer shall pay, all appropriations of money made in pursuance of this section, in the same manner as is now provided by law for auditing and paying demands upon the treasury; said sum or sums so paid shall become a lien on the property from which said nuisance has been removed or abated, in pursuance of this section, and may be recovered by an action against such property. And it shall be the duty of the City and County Attorney to foreclose all such liens in the proper court, in the name of and for the benefit of said city and county, and when the property is sold, enough of the proceeds shall be paid into the City and County Treasury to satisfy the lien and costs; and the overplus, if any there be, shall be paid to the owner of the property, if he be known, and if not, then into the court for his use when ascertained. The Board of Health is hereby vested with power to act upon, define, determine, and adjudge what shall constitute a nuisance in said city and county, and to require the same to be abated in a summary manner. Any person who maintains, permits, or allows a nuisance to exist upon his or her property or premises after the same has been determined by said Board to be a nuisance, and after notice to remove the same has been served upon such person, is guilty of a misdemeanor, and shall be punished accordingly; and each day of such existence, after notice, shall be deemed a separate and distinct offense; and it is the duty of the Health Officer to prosecute all persons guilty of violating this law by continuous prosecutions until the same is abated and removed. [In effect March 9, 1878.]

SEC. 3029. The Health Officer must keep in his office a book in which he must make an entry of all fees collected by him. He must pay all fees collected to the City and County Treasurer weekly, to the credit of the General Fund.

SEC. 3030. The Health Officer must execute an official bond, to be approved by the Board of Health, in the sum of ten thousand dollars.

SEC. 3031. Any member of the Board of Health, Health Officer, or Quarantine Officer, or Secretary, or Assistant Secretary of the Health Department, is empowered to administer oaths on business connected with that department. [In effect March 9, 1878.]

SEC. 3032. Whenever any cause of action arises under any of the provisions of this chapter, suit may be maintained therein in the name of the Health Officer, in any District Court of this State.

SEC. 3033. Whenever it shall be certified to the Board of Health, by the Health Officer, that any building or part thereof is unfit for human habitation, by reason of its being so infected with disease as to be likely to cause sickness among the occupants, or, by reason of its want of repair, has become dangerous to life, said Board may issue an order and cause the same to be affixed conspicuously on the building, or part thereof, and to be personally served upon the owner, agent, or lessee, if the same can be found in this State, requiring all persons therein to vacate such building, for the reasons to be stated therein as aforesaid. Such building, or part thereof, shall, within ten days thereafter, be vacated; or within such shorter time (not less than twenty-four hours), as in said notice may be specified; but said Board, if it shall become satisfied that the danger from said house, or part thereof, has ceased to exist, may revoke said order, and it shall thenceforward become inoperative. [In effect March 9, 1878.]

SEC. 3034. *First*—Every physician in the city and county shall report to the Health Officer, in writing, every patient he shall have laboring under Asiatic cholera, variola, diphtheria, or scarlatina, immediately thereafter, and report to the same officer every case of death from such disease immediately after it shall have occurred.

Second—Every householder in said city and county shall forthwith report in writing, to the Health Officer, the name of every person boarding, or inmate, at his or her house, whom he or she shall have reason to believe sick of cholera or smallpox, and any deaths occurring at his or her house from such disease. [In effect March 9, 1878.]

SEC. 3035. The Board of Health shall have entire charge of the City Cemetery, and shall employ a Superintendent, at a salary of seventy-five dollars per month, the same to be paid as the salaries of other employés are paid. [In effect March 9, 1878.]

ARTICLE IV.

HEALTH REGULATIONS FOR THE CITY OF SACRAMENTO.

- SECTION 3042. Board of Health, who and how appointed.
3043. Term of office.
3044. Powers of the Board of Health.
3045. Pesthouses, how located and conducted.
3046. Death records.
3047. Enforcement of regulations. Health Officer.
3048. Expenses, how paid.
3049. Compensation, how paid.

SEC. 3042. The Board of Trustees of the City of Sacramento may establish by ordinance a Board of Health therefor, to consist of five practicing physicians, graduates of a medical college of recognized respectability; and the President of the Board of Trustees is ex officio President of the Board.

SEC. 3043. The members of the Board hold their offices at the pleasure of the appointing power.

SEC. 3044. The Board of Health of the City of Sacramento has a general supervision of all the matters appertaining to the sanitary condition of the city, and may make such rules and regulations in relation thereto as are not inconsistent with law.

SEC. 3045. The Board of Health may locate and establish pesthouses, and cause to be removed thereto, and kept, any person having a contagious or infectious disease; may discontinue or remove the same, and make such rules and regulations regarding the conduct of the same as are needful.

SEC. 3046. The Board of Health must exercise a general supervision over the death records of the City of Sacramento, and may adopt such forms and regulations for the use and government of physicians, undertakers, and Superintendents of Cemeteries, as in their judgment may be best calculated to secure reliable statistics of the mortality in the city, and prevent the spread of disease.

SEC. 3047. The Board of Trustees of the City of Sacramento must, by ordinance or otherwise, provide for enforcing such orders and regulations as the Board of Health may from time to time adopt; and in times of epidemics, or when deemed necessary by the Board of Health, a Health Officer must be employed to enforce the laws in relation to the sanitary condition of the city.

SEC. 3048. All expenses necessarily incurred in carrying out the provisions of this article must be provided for by the Board of Trustees of the City of Sacramento, who may make appropriation therefor out of the Special Street Fund, if the same is sufficient; if not, they may by taxation provide a fund therefor.

SEC. 3049. The Board of Trustees must fix the compensation of the Board of Health and the Health Officer.

ARTICLE V.

HEALTH AND QUARANTINE OF OTHER CITIES, TOWNS, AND HARBORS.

- SECTION 3059. Boards of Supervisors may adopt Article III.
3060. Boards of Supervisors may adopt Article IV.
3061. Board of Health established in towns and cities.
3062. May appoint Health Officer in lieu of Board.
3063. Per capita or property tax, how levied.

SEC. 3059. The Board of Supervisors of any county in which there is a port of entry or harbor, for which there is not otherwise provided health and quarantine regulations, may by an ordinance adopt the whole or any part of the provisions of article three of this chapter, appoint a Board of Health, or Health Officer, locate quarantine grounds when necessary, and provide for the enforcement of health and quarantine regulations.

[Local adaptation of health and quarantine regulations, see Sec. 4046, Sub. 20.]

SEC. 3060. In like manner the Board of Supervisors of any county in which there is an unincorporated city or town, for which there is not otherwise provided a Board of Health, or health regulations in time of epidemics or the existence of contagious or infectious diseases, may by an ordinance adopt for such city or town, in whole or in part, the provisions of article four of this chapter, for some definite period of time, and appoint therefor a Board of Health.

SEC. 3061. It shall be the duty of the Board of Trustees, Council, or other corresponding board, of every incorporated town and city of this State, to establish, by ordinance, a Board of Health for such town or city, to consist of five persons, one of whom at least shall be a practicing physician and a graduate of some reputable school of medicine, and one, if practicable, a civil engineer. The members of the Board shall hold their offices at the pleasure of the appointing power. Every local Board of Health established in this State must:

First—Supervise all matters pertaining to the sanitary condition of their town or city, and make such rules and regulations relative thereto as are necessary and proper, and not contrary to law.

Second—Report to the Secretary of the State Board of Health, at Sacramento, at such times as the State Board of Health may require:

- (a) The sanitary condition of their locality.
- (b) The number of deaths, with the cause of each, as near as can be ascertained, within their jurisdiction, during the preceding month.
- (c) The presence of epidemic or other dangerous, contagious, or infectious disease, and such other matters, within their knowledge or jurisdiction, as the State Board may require.

The Trustees, Council, or other legislative Board, by whatever name known, of any incorporated city or town of this State may, by ordinance, adopt any portion of article three and article four of this chapter, or either

of them, for some definite period of time, as may seem proper for the regulation of sanitary matters within their town or city. [In effect March 19, 1878.]

This Act shall not extend to any incorporated city or town, or city and county, for which health regulations and [are?] provided by special statutes.

[Local adaptation of health laws, see Sec. 4046, Sub. 20; Sec. 4408, Sub. 18.]

[Section inapplicable to incorporated city, town, etc., for which health regulations provided by special statute, see Sec. 2 of Amendatory Acts in Stats. 1878, p. 59.]

SEC. 3062. The Board of Supervisors of each county must appoint, in each unincorporated city or town of five hundred or more inhabitants, a Health Officer, who has all the duties and powers of the Board of Health and Health Officer, as specified in this and the two preceding articles. [In effect March 1, 1889, as amended.]

SEC. 3063. All necessary expenses of enforcing this article are charges against the counties, cities, or towns, respectively, for the payment of which the county, city, or town may levy a per capita tax of not exceeding three dollars, or a property tax of not exceeding one fourth of one per cent, yearly, until the same is paid.

SEC. 3064. The Board of Supervisors must fix the salary or compensation of Boards of Health or Health Officers, and provide for the expenses of enforcing the provisions of this article. If the Board of Supervisors or Board of Trustees, Council, or other corresponding Board of any incorporated town, neglect to provide a Board of Health or Health Officer by the first day of July, eighteen hundred and eighty-nine, the State Board of Health may direct the District Attorney of the county to begin an action against such Board of Supervisors, or Board of Trustees, or corresponding Board, to compel the performance of their duty, or may appoint a Board of Health, or Health Officer with the powers of a Board of Health, for such town or city, and the expenses of such Board of Health, or Health Officer, shall be a charge against the incorporated city or town for which such appointment shall be made; and when the appointment is made for unincorporated towns the expenses of the Board of Health, or Health Officer, are a charge against the county. [In effect March 1, 1889.]

CHAPTER III.

REGISTRY OF BIRTHS, MARRIAGES, AND DEATHS.

SECTION 3074. Registry of marriages.

3075. Registry of births.

3076. Registry of deaths.

3077. Reports to Recorder.

3078. Same.

3079. Duties of Recorder.

3080. Report to the Secretary of State Board of Health.

3081. Fees.

3082. Penalties.

3083. Printing and distribution of forms of register

SEC. 3074. All persons who perform the marriage ceremony must keep a registry of the time of each marriage so celebrated, the residence, the names in full, the place of birth, the age of each party, and whether either party has ever been before married. [In effect March 16, 1878.]

SEC. 3075. All physicians and professional midwives must keep a registry of the time of each birth at which they assist professionally, the sex, race, and color of the child, and the names and residence of the parents.

SEC. 3076. Physicians who attend deceased persons in their last sickness, clergymen who officiate at a funeral, Coroners who hold inquests, sextons and undertakers who bury deceased persons, must each keep a registry of the name, age, residence, and time of death of such person. [Approved March 30th; in effect July 6, 1874.]

SEC. 3077. All persons registering marriages, births, or deaths, must quarterly file with the County Recorder a certified copy of their register. All such certificates must specify, as near as may be ascertained, the name in full, age, occupation, term of residence in the city or county, birthplace, condition, whether single or married, widow or widower, sex, race, color, last place of residence, and cause of death of all decedents. [In effect March 16, 1878.]

SEC. 3078. If at birth no physician or midwife attend, then the parents must make the report.

SEC. 3079. The Recorder must keep separate registers, to be known as the "Register of Marriages," the "Register of Births," and the "Register of Deaths," in which the marriages, births, and deaths certified to him must be numbered in the order in which they are reported to him. There must be stated in each register, in separate columns, properly headed, the various facts contained in the certificates, and the name and official or clerical position of the person making the report. The Recorder must carefully examine each report, and register the same marriage, birth, or death but once, although it may be reported by different persons. [In effect March 16, 1878.]

SEC. 3080. The County Recorder must, every three months, transmit to the Secretary of the State Board of Health, at Sacramento City, a certified abstract of the registers of births, marriages, and deaths, prepared in the manner prescribed in the instructions of the Secretary, and upon blanks to be furnished by him for that purpose.

SEC. 3081. County Recorders, in those counties where their compensation is by fees, shall be allowed by the Board of Supervisors a fee of not exceeding ten cents for each name reported, to be paid out of the General Fund of the county; and in those counties where their compensation is by a fixed salary, the duties in this chapter provided shall be performed without compensation other than such salary. [In effect March 16, 1878.]

SEC. 3082. Any person on whom a duty is imposed by this chapter who fails, neglects, or refuses to perform the same as herein required, is liable to a penalty of fifty dollars, to be recovered by the District Attorney of the proper county for the use of the General Fund of such county.

SEC. 3083. The Secretary of the State Board of Health must prepare blank forms of said registers for the State Printer, who must print as many copies as the said Secretary shall direct, and deliver the same to the Secretary of State, who shall forward the same, from time to time, and in such numbers as shall be directed by the Secretary first mentioned, to the County Recorders of the several counties, who must carefully keep and distribute the same to the persons in the county who are required to keep the registers and make the reports provided in this chapter. [In effect March 16, 1878.]

SEC. 3084. No person shall inter, cremate, or otherwise dispose of any human body, in any city, county, or city and county, without having first obtained a permit therefor. In incorporated cities, or counties, or cities and counties, the permit must be obtained from the person authorized to grant the same by any law, ordinance, or resolution passed for that purpose. But in the absence of such law, ordinance, or resolution, the permit must be obtained from either the Coroner, or Health Officer, Board of Health, or if the Coroner be absent, then from the Health Officer or Board of Health; and if there be no Board of Health or Health Officer, then from a Justice of the Peace. The person applying for a permit must produce and file with the officer issuing the permit a certificate signed, by a physician, or a Coroner, or two reputable citizens, setting forth as near as possible the name, age, color, place of birth, occupation, date, locality, and cause of death of deceased. And no permit shall be granted without the production of such certificate. Such permit must be filed with the County Recorder, and the person so filing is entitled to the compensation provided for in section three thousand and seventy-seven of this Code, but if any other registration of the death of the deceased shall have been made, the Recorder must record the name but once. [Approved February 25, 1889; in effect thirty days after.]

PART IV—Of the Government of Counties, Cities, and Towns.

TITLE II—The Government of Counties.

CHAPTER II.

THE BOARD OF SUPERVISORS.

ARTICLE II.

GENERAL PERMANENT POWERS.

SEC. 4046. The Boards of Supervisors, in their respective counties, have jurisdiction and power, under such limitations and restrictions, as are prescribed by law:

* * * * *

20. To adapt to the county the provisions in this Code for the preservation of the health of San Francisco or Sacramento, for such limited time as they may deem proper, and to provide for the expense thereof.

ADDITIONAL STATUTES OF CALIFORNIA.

CHAPTER CCXXIX.

An Act to provide for the grading of public alleys and the construction of sewers therein in the City of Sacramento.

[Approved March 21, 1868.]

SECTION 1. Whenever the Board of Trustees of the City of Sacramento shall deem it expedient to construct a sewer in any public alley, they may order such sewer to be constructed, after having published a notice of such intention in some daily newspaper printed in said city, for the period of ten days, unless the owners of more than one half in extent of the land and lots bisected by such alley shall have made written objections thereto, and delivered the same to the Clerk of said Board of Trustees within the said period of ten days.

SEC. 2. If the owners, or their duly authorized agents, of more than one half in extent of the lands and lots in any block of land bisected by any such alley shall petition said Board of Trustees, in writing, to

cause a sewer to be constructed through the same, the said Board of Trustees shall order the same to be done; or whenever the Board of Health of the City of Sacramento shall, by an order duly made and entered on their records, declare that it is necessary for the public health or cleanliness that a sewer should be constructed in any public alley in said city, and shall have delivered a certified copy of said order to the Board of Trustees, the said Board of Trustees shall order such sewer or sewers constructed, and proceed in the same manner as if said work had been petitioned for by the requisite number of property owners, as above. The cost of constructing that portion of all sewers that extend across streets, or that extend from the line of the block to the main sewer, shall be paid by the city out of the Special Street Fund.

CHAPTER CCCXXXIV.

An Act to authorize the establishment of a Board of Health in the City of Sacramento.

[Approved March 27, 1868.]

SECTION 1. The Board of Trustees of the City of Sacramento shall have power to establish, by ordinance, a Board of Health for the City of Sacramento. Said Board of Health shall consist of five practicing physicians, who shall each be graduates of a medical college of recognized respectability, and the President of the Board of Trustees shall be ex officio President of the Board of Health.

SEC. 2. The Board of Health shall have general supervision of all matters appertaining to the sanitary condition of said city; and full powers are hereby given to said Board to adopt such measures and make such orders and regulations as at any time, in their opinion, the public safety may require, and not in contravention of any law; but such orders and regulations shall not take effect until approved by resolution or order of the Board of Trustees of said city.

SEC. 3. The Trustees of said city shall by ordinance provide, in such manner as to them shall seem best, for enforcing such orders and regulations as the Board of Health shall from time to time adopt.

SEC. 4. The Board of Health now recognized by an ordinance passed by the Trustees of said city shall continue to perform the duties pertaining to their office until their successors are duly appointed and qualified.

SEC. 5. This Act shall take effect from and after its passage.

CHAPTER CCCXLVI.

An Act amendatory of and supplementary to an Act to authorize the establishment of a Board of Health in the City of Sacramento, approved March 27, 1868.

[In effect March 29, 1870.]

SECTION 1. The Board of Trustees of the City of Sacramento shall have power, and it is hereby made their duty, to establish by ordinance a Board of Health for the City of Sacramento. Said Board of Health shall consist of five practicing physicians, who shall each be graduates of a medical college of recognized respectability, and the President of the Board of Trustees shall be ex officio President of the Board of Health.

SEC. 2. The Board of Health of the City of Sacramento now recognized by the Board of Trustees shall have a general supervision of all matters appertaining to the sanitary condition of said city, and full powers are hereby given to said Board of Health over all questions of foul or defective drainage, and of the disinfecting and cleaning of streets, alleys, cellars, cesspools, or nuisances of any description, and of low places within the city limits calculated to receive and retain unhealthy deposits.

SEC. 3. The Board of Health shall exercise a general supervision over the death records of the City of Sacramento, and adopt such forms and regulations for the use and government of physicians, undertakers, and Superintendents of Cemeteries as in their judgment may be best calculated to secure reliable statistics of the mortality in said city and prevent the spread of disease.

SEC. 4. The Board of Trustees of the City of Sacramento shall, by ordinance or otherwise, provide for enforcing such orders and regulations as the Board of Health may from time to time adopt; and in times of epidemics, or when deemed necessary by the Board of Health, a Health Officer shall be employed to enforce the laws in relation to the sanitary condition of said city.

SEC. 5. All expenses necessarily incurred in carrying out the provisions of this Act shall be provided for by the Board of Trustees of the City of Sacramento, who are hereby authorized and directed to make appropriation therefor out of the special fund called the Street Fund in the Act entitled an Act to amend an Act to incorporate the City of Sacramento, approved April twenty-fifth, eighteen hundred and sixty-three, approved March eighteenth, eighteen hundred and seventy.

CHAPTER CCCCXL.

An Act to confer further powers on the Board of Trustees of the City of Sacramento.

[Approved March 31, 1876.]

SECTION 1. The Board of Trustees of the City of Sacramento are hereby authorized and empowered, and it is made their duty, to require all lots, and portions of lots, in the City of Sacramento, north of R Street, west of Fourteenth Street, south of that portion of the north levee lying east of Sixth Street, south of that portion of I Street lying west of Sixth Street and east of the Sacramento River, which are covered with stagnant water a portion of the year, to be filled up to such level or grade as will prevent the same from being so covered.

SEC. 2. Whenever said Board shall declare a lot or portion of lot to be included within the provisions of section one herein, they shall cause to be entered in their minutes of proceedings an order, which may be in substance in the following form: The Board of Trustees of the City of Sacramento hereby determine that (here describe the real estate) is covered with stagnant water portions of the year. It is therefore ordered that the owner or owners thereof fill up the same to a proper level, to be fixed by the City Surveyor, or that the same be filled up at his or their expense. The owner of any lot, or portion thereof, included in such order, may at any time prior to awarding a contract for doing the work, as provided in section three herein, present and file with the Board a protest against the filling up of such lot as contemplated by the order, on the ground that such lot, or portion thereof, is not, during any portion of the year, covered with stagnant water. And if, on a hearing of such protest, the Board finds the same to be true, they shall, by their order, exclude such lot, or portion of a lot, from their original order; but if the Board finds the protest to be not true, they shall proceed as if no protest had been presented and filed. [Amendment of March 30, 1878.]

* * * * *

[Other sections relate to fixing grade, awarding contracts, assessment and payment of costs.]

CHAPTER CCXXXII.

[Stats. of 1875-6, p. 306.]

SECTION 4. No person, master, captain, or conductor in charge of any boat, vessel, railroad car, or public or private conveyance, shall receive for transportation, or shall transport, the body of any person who has died within the limits of the City and County of San Francisco, with-

out obtaining a permit for the same from the Health Officer, which permit must accompany the body to its destination; and no person, master, captain, or conductor, as aforesaid, shall bring into or transport through the said city and county the dead body of any person, unless it be accompanied with a certificate from some proper authority of the place whence it came, stating name, age, sex, and cause of death, which certificate shall be filed at the Health Office; *provided*, that in no case shall the body of any person who died of a contagious disease be brought to the city within one year of the day of death.

CHAPTER DCLXXIII.

An Act to protect public health from infection caused by exhumation and removal of the remains of deceased persons.

[In force May 1, 1878.]

SECTION 1. It shall be unlawful to disinter or exhume from a grave, vault, or other burial place, the body or remains of any deceased person, unless the person or persons so doing shall first obtain, from the Board of Health, Health Officer, Mayor, or other head of the municipal government of the city, town, or city and county, where the same are deposited, a permit for said purpose. Nor shall such body or remains disinterred, exhumed, or taken from any grave, vault, or other place of burial or deposit, be removed or transported in or through the streets or highways of any city, town, or city and county, unless the person or persons removing or transporting such body or remains shall first obtain from the Board of Health, or Health Officer (if such board or officer there be), and from the Mayor or other head of the municipal government of the city or town, or city and county, a permit, in writing, so to remove or transport such body or remains in and through such streets and highways.

SEC. 2. Permits to disinter or exhume the bodies or remains of deceased persons, as in the last section, may be granted; *provided*, the person applying therefor shall produce a certificate from the Coroner, the physician who attended such deceased person, or other physician in good standing cognizant of the facts, which certificate shall state the cause of death, or disease of which the person died, and also the age and sex of such deceased; *and provided further*, that the body or remains of deceased shall be inclosed in a metallic case or coffin, sealed in such manner as to prevent, as far as practicable, any noxious or offensive odor or effluvia escaping therefrom, and that such case or coffin contains the body or remains of but one person, except where infant

children, of the same parent or parents, or parent and children, are contained in such case or coffin. And the permit shall contain the above conditions, and the words: "Permit to remove and transport the body of ———, age ———, sex ———," and the name, age, and sex shall be written therein. The officer of the municipal government of the city or town, or city and county, granting such permit, shall require to be paid for each permit the sum of ten dollars, to be kept as a separate fund by the Treasurer, and which shall be used in defraying expenses of and in respect to such permits, and for the inspection of the metallic cases, coffins, and inclosing boxes herein required; and an account of such moneys shall be embraced in the accounts and statements of the Treasurer having the custody thereof.

SEC. 3. Any person or persons who shall disinter, exhume, or remove, or cause to be disinterred, exhumed, or removed, from a grave, vault, or other receptacle or burial place, the body or remains of a deceased person without a permit therefor, shall be guilty of a misdemeanor, and be punished by a fine not less than fifty nor more than five hundred dollars, or by imprisonment in the county jail for not less than thirty days nor more than six months, or by both such fine and imprisonment. Nor shall it be lawful to receive such body, bones, or remains on any vehicle, car, barge, boat, ship, steamship, steamboat, or vessel for transportation in or from this State, unless the permit to transport the same is first received, and is retained in evidence by the owner, driver, agent, superintendent, or master of the vehicle, car, or vessel.

SEC. 4. Any person or persons who shall move or transport, or cause to be moved or transported, on or through the streets or highways of any city or town, or city and county, of this State, the body or remains of a deceased person, which shall have been disinterred or exhumed without a permit, as described in section two of this Act, shall be guilty of a misdemeanor, and be punishable as provided in section three of this Act.

SEC. 5. Any person who shall give information to secure the conviction of any person or persons for the violation of the provisions of this Act shall be entitled to receive the sum of twenty-five dollars, to be paid from the fund collected from fines imposed and accruing under this Act.

SEC. 6. Nothing in this Act contained shall be taken to apply to the removal of the remains of deceased persons from one place of interment to another cemetery or place of interment within the State; *provided*, that no permit shall be issued for the disinterment or removal of any body unless such body has been buried for one year or more, without the written consent of the Mayor, Chairman of the Board of Supervisors, or City Council of any municipality of the State. [As amended and passed March, 1889.]

CHAPTER CCXLVII.

An Act authorizing the Mayor and Common Council of the City of San José to establish and provide for the maintenance of a Board of Health.

[Approved March 16, 1878.]

SECTION 1. The Mayor and Common Council of the City of San José may establish, by ordinance, a Board of Health therefor, to consist of five regular practicing physicians, graduates of a medical college of recognized respectability.

SEC. 2. The members of the Board hold their offices at the pleasure of the appointing power.

SEC. 3. The Board of Health of the City of San José has a general supervision of all the matters appertaining to the sanitary condition of the city, and make such rules and regulations in relation thereto as are not inconsistent with law.

SEC. 4. The Mayor is ex officio President of the Board. The Board must meet monthly, and at such other times as the President may direct. In the absence of the President, the Board may elect a Chairman, who is clothed with the same power as the President.

SEC. 5. The Health Officer of the City of San José is elected by the Board of Health, and holds office at its pleasure. He must be a graduate of some medical college in good standing, and must reside within the City of San José.

SEC. 6. The Health Officer may perform all acts which Quarantine Officers are usually authorized to perform, and he is the executive officer of the Board of Health.

SEC. 7. The Board of Health may locate and establish pesthouses, and cause to be removed thereto, and kept, any person having a contagious or infectious disease; may discontinue or remove the same, and make such rules and regulations regarding the conduct of the same as are needful.

SEC. 8. The Board of Health may exercise a general supervision over the death records of the City of San José, and may adopt such forms and regulations for the use and governance of physicians, and undertakers, and Superintendent of Cemeteries, as in their judgment may be best calculated to secure reliable statistics of the mortality in the city, and prevent the spread of disease.

SEC. 9. The Mayor and Common Council of the City of San José must, by ordinance or otherwise, provide for enforcing such orders and regulations as the Board of Health may from time to time adopt.

SEC. 10. All expenses necessarily incurred in carrying out the provisions of this article must be provided for by the Mayor and Common Council of the City of San José, who may make appropriation therefor

out of the Special Street Fund, if the same is sufficient; if not, they may, by taxation, provide a fund therefor.

SEC. 11. The Mayor and Common Council must fix the compensation of the Board of Health and Health Officer.

CHAPTER CCCXXV.

An Act to provide and maintain a system of sewerage in the City of Petaluma, and to take private lands therefor.

[In effect March 23, 1878.]

SECTION 1. The Board of Trustees of the City of Petaluma are hereby empowered and directed to have surveyed, laid out, established, constructed, and maintained, a general system of sewerage for the City of Petaluma, and for that purpose shall employ a competent engineer to survey, map, and plat such contemplated sewerage, showing the location, length, and size of such sewers, which survey, map, and plat when completed, with his recommendations, he shall file with the Clerk of the Board of Trustees; upon the filing of which, the Board of Trustees shall give at least ten days' notice, by publication in some newspaper published in said city, of the time and place when they will consider said report and hear objections, and may modify and correct the same; and so modified and corrected shall, by resolution, adopt the same, or any part thereof, as the official map of sewers. The compensation of such engineer, and such assistants as may be required, shall be determined by said Board, and shall be paid by warrant on the Sewer Fund of said city.

SEC. 2. In order to provide for the necessary and proper drainage and sewerage of the City of Petaluma, the Board of Trustees thereof are hereby authorized to procure the right of way by purchase, or condemnation, for such main and lateral sewers or drains as they may deem proper for the sewerage and drainage of said city; such rights of way may be thus secured through lands within the corporate limits, and also when required through lands adjacent to and without said city, under the provisions of part three, title seventeen, of the Code of Civil Procedure, for the purpose of condemning such lands, or the right of way through the same, to the use of the city for public drains or sewers; *provided*, that the benefits resulting to the land remaining or adjoining may be offset against the value of the land actually taken, as also against any damages resulting to such adjacent land from such improvement.

SEC. 3. The Board of Trustees of the City of Petaluma, in addition to the taxes now authorized by law, are hereby authorized and empowered

to levy annually an additional tax on all real and personal property of said city, not to exceed twenty cents on each one hundred dollars, to be levied and collected at the same time and in the same manner as other city taxes, and to be known as the sewer tax, which shall constitute a separate fund, to be known as the "Sewer Fund."

SEC. 4. It shall be the duty of the Board of Trustees to construct, maintain, and keep in repair, according to the general system of sewerage adopted, such sewers as from time to time they may deem necessary for the health and welfare of said city.

SEC. 5. All proceedings, contracts, and work in relation to the construction of sewers under this Act, shall be governed in all respects by the provisions of the city charter in relation to street work, except that no petition of property owners shall be necessary. The Board must not, without the consent of owners of adjacent property, change the width of any sidewalk, after said sidewalk has been constructed, for a period of five years.

CHAPTER CCCIV.

An Act to promote the sanitary condition of towns and villages in Fresno County.

[Approved March 20, 1873.]

SECTION 1. It is unlawful for any person, being a resident within any town or village, incorporated or unincorporated, which contains ten or more dwellings, to have or allow on his, her, or their premises, or permit to accumulate upon the half of any street or alley contiguous thereto, any filth or rubbish, or have any deposit of excrement or other filth upon either, or permit such premises to become in any manner filthy or in an unhealthy condition.

SEC. 2. Upon the application of any resident of any such town or village, if unincorporated, the Board of Supervisors of the county wherein the same is situate, shall define and place of record in their minutes the limits and boundaries thereof; said Board shall appoint one of the Constables of the township wherein such town or village is situate, and notify him of his appointment, to carry out the provisions of this Act as hereinafter specified.

SEC. 3. It is the duty of such Constable, when so appointed, to inspect the premises of every street, alley, or vacant lot within the limits of the town or village for which he is appointed at least twice during each month, upon the first and third Mondays thereof, and in case that he find that any premises, or the half of any streets or alleys contigu-

ous thereto, have upon them any filth or rubbish, or any deposit of excrement or other filth, he shall give written notice to the owner or occupant of such premises to remove the same; and in case the same be not removed within three days thereafter, he shall cause it to be done and such premises thoroughly cleansed in the manner directed by the Health Officer of the county, if there be one, at the expense of the owner or occupant, including his fee of two dollars for each premises so cleansed by him; and it is the duty of such Health Officer to give written directions to such Constable as to how he shall cleanse premises, and such Health Officer shall, at the request of any citizen, examine any premises and require such Constable to cleanse the same and see that such cleansing is properly and efficiently done.

SEC. 4. If said expenses and fee be not paid on presentation of his itemized account therefor, the Constable may maintain action therefor, including a reasonable attorney's fee, to be fixed by the Court; and from the execution in such action no property of the defendant shall be exempt.

SEC. 5. If the Constable cannot find the owner or occupant of any premises within the limits of the town for personal service of the notice hereinbefore mentioned, such notice may be served by posting the same upon some conspicuous place on such premises.

SEC. 6. For every failure or refusal of the Constable or Health Officer to perform any of their duties under this Act, they shall, respectively, forfeit fifty dollars, to be recovered by action, one half to be paid to any person bringing such action, and the other half into the County Indigent Sick Fund. The sureties of the Constable shall be liable for such penalty; but the Health Officer shall not, in the performance of his duties, be required to go beyond the limits of the town wherein he resides.

SEC. 7. This Act shall take effect immediately, and shall apply only to the County of Fresno.

CHAPTER CCCLXXIV.

An Act to establish a Board of Health for the County of Tulare.

[In effect March 26, 1878.]

SECTION 1. There shall be a Board of Health in and for the County of Tulare, consisting of three practical physicians, who are graduates of some medical college in good standing, two of whom, at least, shall be residents of the City of Visalia; and said Board shall serve without compensation.

SEC. 2. The Board of Supervisors of the County of Tulare, at their next regular meeting in May, eighteen hundred and seventy-eight, shall appoint a Board of Health for said county, one of whom shall hold office for the term of one year thereafter, and one for two years, and the other for three years, to be designated by said Board of Supervisors; and annually thereafter, at their regular meeting in May, said Board of Supervisors shall appoint a member of said Board of Health, who shall hold office for the term of three years; and all vacancies shall be filled by said Board of Supervisors by appointment.

SEC. 3. The Board of Health shall have general supervision of all matters appertaining to the sanitary condition of said county, and full powers are hereby given to said Board to adopt such measures and make such orders and regulations as at any time, in their opinion, the public safety may require, and not in contravention of any law. They shall have power to declare any place where they shall have reason to believe a pestilential, contagious, or infectious disease is probably prevailing to an alarming extent to be an infected place, and to fix the period for so considering such place, notice of which shall be given by posting notices or by publication, as said Board shall deem proper.

SEC. 4. All the necessary expenses incurred by said Board of Health for printing, stationery, etc., shall be allowed by the Board of Supervisors and ordered paid out of the General Fund of said county.

SEC. 5. The Board of Health may appoint a clerk, who shall receive a reasonable compensation for his services, not exceeding two hundred dollars per annum, to be fixed and allowed by the Board of Supervisors and payable out of the General Fund of said county.

SENATE CONCURRENT RESOLUTION No. 25.

Relative to appointment of the members of the State Board of Health to consider the subject of a hospital for consumptives.

[Adopted April, 1880.]

Resolved, the Assembly concurring, That a committee of three members of the State Board of Health, to be designated by the Governor, be and are hereby appointed to consider the subject of a State Hospital for Consumptives, to determine a suitable locality, to investigate the probable cost, to devise a general scheme for the construction and management of such an institution, and to report the results of their investigations to the Legislature at its next session.

ASSEMBLY JOINT RESOLUTION No. 7.

Relative to the procuring of a quarantine depot.

[Adopted April 10, 1880.]

WHEREAS, The City of San Francisco, by reason of its commercial relations with Asiatic ports, is alarmingly exposed to the introduction of contagious diseases; and whereas, the port of San Francisco has no place where passengers and cargo can be landed and the necessary sanitary precautions adopted; therefore, be it

Resolved by the Assembly, the Senate concurring, That our Senators and Representatives are hereby requested to use their utmost endeavors to receive from the General Government a portion of one of the islands in the Bay of San Francisco for use as a quarantine depot.

Resolved, That the Governor be requested to transmit a copy of these resolutions to each of our Senators and Representatives in Congress.

ASSEMBLY CONCURRENT RESOLUTION No. 23.

Relative to the establishment of a quarantine station on Angel Island.

[Adopted 1880.]

WHEREAS, It is necessary that some convenient place should be provided for quarantine grounds in the Harbor of San Francisco, and near the city; and whereas, the State Board of Health, after the most careful examination, are unable to find any suitable place in said harbor, except the northern end of Angel Island, and near the eastern side thereof; therefore,

Resolved by the Assembly, the Senate concurring, That our Senators be instructed, and our Representatives in Congress be requested, to procure a strip of land jutting out into the bay at the northeastern part of Angel Island, in the Harbor of San Francisco, consisting of not more than two acres, from the Government of the United States, as a quarantine station for San Francisco, and, if necessary, to procure the necessary legislation for that purpose.

Resolved, That a copy of these resolutions be forwarded by the Governor to each of our Senators and Representatives in Congress.

CHAPTER XC.

An Act to prevent the introduction of contagious or infectious diseases into the State of California.

[In effect March 15, 1883.]

SECTION 1. Whenever there shall exist, in the opinion of the State Board of Health, imminent danger of the introduction of contagious or infectious diseases into the State of California, by means of railroad communication with other States, the State Board of Health are authorized, and it is hereby made their duty, to make or cause to be made, by an accredited agent or inspector, an inspection of all railroad cars coming into the State at such point, or between such points within the State limits as may be selected for the purpose.

SEC. 2. Such inspection shall be made, where practicable, during the ordinary detention of a train at a station, or while in transit between stations, and in all cases shall be so conducted as to occasion the least possible detention or interruption of travel or inconvenience to the railroad companies, so far as consistent with the purposes of this Act.

SEC. 3. Should the discovery be made of the existence among the passengers of any case or cases of dangerous, contagious, or infectious disease, the said Board of Health, or their agent or inspector, under rules and conditions prescribed by them as being applicable to the nature of the disease, shall have power to cause the side-tracking or detention of any car or cars so infected, to isolate the sick, or remove them to a suitable place for treatment, to establish a suitable refuge station, to cause the passengers and materials in such infected car to be subjected to disinfection and cleansing before proceeding farther into the State, and, in the case of smallpox, to offer free vaccination to all persons exposed in any car or at any station.

SEC. 4. The sum of five hundred dollars is hereby appropriated out of any moneys in the treasury not otherwise appropriated, to be expended solely for the purposes of this Act, and all expenditures herein authorized shall be specified in an itemized account to be presented to the State Board of Examiners, and paid as other demands on the treasury are paid; *provided*, that in no case shall the sum expended exceed that herein specially appropriated for the purpose.

CHAPTER XIV.

An Act to grant to Boards of Health, or Health Officers, in cities and cities and counties, the power to regulate the plumbing and drainage of buildings, and to provide for the registration of plumbers.

[In force March 3, 1885.]

SECTION 1. It shall not be lawful for any person to carry on business, or labor as a master or journeyman plumber, in any incorporated city, or in any city and county, in this State, until he shall have obtained from the Board of Health of said city, or city and county, a license authorizing him to carry on business, or labor as such mechanic. A license so to do shall be issued only after a satisfactory examination by the Board of each applicant upon his qualifications to conduct such business, or to so labor. All applications for license, and all licenses issued, shall state the name in full, age, nativity, and place of residence of the applicant or person so licensed. It shall be the duty of the Secretary of each Board of Health to keep a record of all such licenses issued, together with an alphabetical index of the same. [As amended March 9, 1887.]

SEC. 2. A list of all licensed plumbers shall be published in the yearly report of the Health Officer or Board of Health. [As amended March 9, 1887.]

SEC. 3. The drainage and plumbing of all buildings, both public and private, hereafter erected in any city, or city and county, shall be executed in accordance with plans previously approved in writing by the Board of Health of said city, or city and county, and suitable drawings and description of said drainage and plumbing shall, in each case, be submitted to the Board of Health, and placed on file in the Health Office. The said Board of Health is also authorized to receive and place on file drawings and descriptions of the drainage and plumbing of buildings erected prior to the passage of this Act.

SEC. 4. The Boards of Supervisors, or other city, or city and county officials, whose duty it is to make appropriation and tax levies for general purposes of such city, or city and county, shall make the necessary appropriations and tax levies, and shall insert the same in the yearly tax levy, to provide for carrying out the provisions of this Act. Such appropriations and tax levy shall be made at the same time and in the same manner as appropriations and tax levies are made for other city, or city and county purposes.

SEC. 5. In any city, or city and county, where there is under existing laws a Health Officer but no Board of Health, such Health Officer shall perform all the duties required by this Act of the Board of Health, until a Board of Health shall be created; and in any city, or city and

county, where there is no Health Officer nor Board of Health, the Board of Supervisors, or City Council, or other municipal legislative board or body, shall create a Board of Health, who shall perform all the duties required by this Act of the Board of Health or Health Officer.

SEC. 6. Any Superior Court, or Judge thereof, shall have power to restrain, by injunction, the continuance of work to be done upon or about buildings or premises where the provisions of this Act have not been complied with, and no undertaking shall be required as a condition to the granting or issuing of such injunction, or by reason thereof.

SEC. 7. Any person violating any of the provisions of this Act shall be deemed guilty of a misdemeanor, and upon conviction shall be punished accordingly.

CHAPTER XXXVIII.

An Act to provide for analyzing the minerals, mineral waters and other liquids, and the medicinal plants of the State of California, and of foods and drugs, to prevent the adulteration of the same.

[Approved March 9, 1885.]

SECTION 1. The Governor of the State of California shall appoint one of the professors of the State University of California of sufficient competence, knowledge, skill, and experience, as State Analyst, whose duty it shall be to analyze all articles of food, drugs, medicines, medicinal plants, minerals, and mineral waters, and other liquids or solids which shall be manufactured, sold, or used within this State, when submitted to him, as hereinafter provided.

SEC. 2. The State Board of Health and Vital Statistics, or medical officers of health of any city, town, or of any city and county, or county, may, at the cost of their respective boards or corporations, purchase a sample of any food, drugs, medicines, medicinal plants, mineral waters, or other liquids offered for sale in any town, village, or city in this State, and submit the same to the State Analyst, as hereinafter provided; and said Analyst shall, upon receiving such article duly submitted to him, forthwith analyze the same, and give a certified certificate to the Secretary of the State Board of Health submitting the same, wherein he shall fully specify the result of the analysis; and the certificate of the State Analyst shall be held in all the courts of this State as prima facie evidence of the properties of the articles analyzed by him.

SEC. 3. Any person desiring an analysis of any food, drug, medicine, medicinal plant, soil, mineral water, or other liquid, shall submit the same to the Secretary of the State Board of Health, together with a

written statement of the circumstances under which he procured the article to be analyzed, which statement must, if required by him, be verified by oath; and it shall be the duty of the Secretary of the State Board of Health to transmit the same to the State Analyst, the expenses thereof to be defrayed by the said Board.

SEC. 4. The State Analyst shall report to the State Board of Health the number of all the articles analyzed, and shall specify the results thereof to said Board annually, with a full statement of all the articles analyzed, and by whom submitted.

SEC. 5. The State Board of Health may submit to the State Analyst any samples of food, drugs, medicines, medicinal plants, mineral waters, or other liquids, for analysis, as hereinbefore provided.

SEC. 6. It shall be competent for the Mineralogist of the State of California to submit to the State Analyst any minerals of which he desires an analysis to be made; *provided*, that the cost of the same shall be defrayed by the Mineralogical Bureau.

SEC. 7. The Board of State Viticultural Commissioners shall have the same privileges as are provided for the State Board of Health under this Act, with respect to samples of wines and grape spirits, and of all liquids and compounds in imitation thereof; and any person or persons desiring analyses of such products shall submit the same to the Secretary of the said Board of State Viticultural Commissioners, and the same shall be transmitted to the State Analyst, in the manner prescribed in section three of this Act. The analyses shall be made, and the certificates of the State Analyst shall be forwarded to the Secretary of the said Board of State Viticultural Commissioners, and shall have the same force and effect as provided for in section two of this Act, with respect to analyses made for the State Board of Health.

CHAPTER XXII.

An Act to appropriate money to prevent the introduction of contagious and infectious diseases.

[In force March 4, 1887.]

SECTION 1. The sum of ten thousand dollars is hereby appropriated out of the General Fund in the State Treasury, to be expended by the State Board of Health, under the direction of the Governor, for the prevention of the introduction of any contagious and infectious diseases into the State. The claims for such expenditures must be audited by the Board of Examiners; except that when a contingency arises, which, in

the opinion of the Governor, demands the immediate use of money, the Controller may draw his warrant, upon the order of the Governor, in such sums, not exceeding one thousand dollars, as he may direct, in the name of the State Board of Health; *provided*, that an account must be thereafter filed with the Board of Examiners, and audited by it, and transmitted to the Controller, showing the manner of such expenditure.

CHAPTER XXIV.

An Act to encourage and provide for a general vaccination in the State of California.

[In force February 20, 1889.]

SECTION 1. The Trustees of the several common school districts in this State, and Boards of common school government in the several cities and towns, are directed to exclude from the benefits of the common schools therein any child or any person who has not been vaccinated, until such time when said child or person shall be successfully vaccinated; *provided*, that any practicing and licensed physician may certify that the child or person has used due diligence and cannot be vaccinated so as to produce a successful vaccination, whereupon such child or person shall be excepted from the operation of this Act.

SEC. 2. The Trustees or local Boards, annually, or at such special times to be stated by the State Board of Health, must give at least ten days' notice, by posting a notice in two or more public or conspicuous places within their jurisdiction, that provision has been made for the vaccination of any child of suitable age who may desire to attend the common schools, and whose parents or guardians are pecuniarily or otherwise unable to procure vaccination for such child.

SEC. 3. The said Trustees or Board must, within sixty days after the passage of this Act, and every year thereafter, ascertain the number of children or persons in their respective school districts, or subdivision of the city school government, being of an age suitable to attend common schools, who have not been already vaccinated, and make a list of the names of all such children or persons. It also shall be the duty of said Trustees or Board to provide, for the vaccination of all such children or persons in their respective school districts, a good and reliable vaccine virus wherewith to vaccinate such children or persons who have not been vaccinated. And when so vaccinated to give a certificate of vaccination, which certificate shall be evidence thereof for the purpose of complying with section one.

SEC. 4. The necessary expenses incurred by the provisions of this Act shall be paid out of the common school moneys apportioned to the district, city, or town. And if there be not sufficient money, the Trustees must notify the Board of Supervisors of the amount of money necessary, and the Board must, at the time of levying the county tax, levy a tax upon the taxable property in the district sufficient to raise the amount needed. The rate of taxation is ascertained by deducting fifteen per cent for delinquencies from the assessment, and the rate must be based upon the remainder. The tax so levied must be computed and entered upon the assessment roll by the County Auditor, and collected at the same time and in the same manner as State and county taxes, and when collected shall be paid into the county treasury for the use of the district.

SEC. 5. The Trustees of the several school districts of this State are hereby required to include in their annual report, and report to the Secretary of the State Board of Health, the number in their several districts between the ages of five and seventeen years who are vaccinated and the number unvaccinated.

CHAPTER V.

An Act to provide for the proper sanitary condition of factories and workshops, and the preservation of the health of the employés.

[In force February 6, 1889.]

SECTION 1. Every factory, workshop, mercantile or other establishment, in which five or more persons are employed, shall be kept in a cleanly state and free from the effluvia arising from any drain, privy, or other nuisance, and shall be provided, within reasonable access, with a sufficient number of water-closets or privies for the use of the persons employed therein. Whenever the persons employed as aforesaid are of different sexes, a sufficient number of separate and distinct water-closets or privies shall be provided for the use of each sex, which shall be plainly so designated, and no person shall be allowed to use any water-closet or privy assigned to persons of the other sex.

SEC. 2. Every factory or workshop in which five or more persons are employed shall be so ventilated while work is carried on therein that the air shall not become so exhausted as to be injurious to the health of the persons employed therein, and shall also be so ventilated as to render harmless, as far as practicable, all the gases, vapors, dust, or other impurities generated in the course of the manufacturing process or handicraft carried on therein, that may be injurious to health.

SEC. 3. No basement, cellar, underground apartment, or other place which the Commissioner of the Bureau of Labor Statistics shall condemn as unhealthy and unsuitable, shall be used as a workshop, factory, or place of business in which any person or persons shall be employed.

SEC. 4. If in any factory or workshop any process or work is carried on by which dust, filaments, or injurious gases are generated or produced that are liable to be inhaled by the persons employed therein, and it appears to the Commissioner of the Bureau of Labor Statistics that such inhalation could, to a great extent, be prevented by the use of some mechanical contrivance, he shall direct that such contrivance shall be provided, and within a reasonable time it shall be so provided and used.

SEC. 5. Every person, firm, or corporation employing females in any manufacturing, mechanical, or mercantile establishment shall provide suitable seats for the use of the females so employed, and shall permit the use of such seats by them when they are not necessarily engaged in the active duties for which they are employed.

SEC. 6. Any person or corporation violating any of the provisions of this Act shall be punished by a fine of not less than fifty nor more than one hundred dollars for each offense.

SEC. 7. It shall be the duty of the Commissioner of the Bureau of Labor Statistics to enforce the provisions of this Act.

CHAPTER CXLVIII.

An Act to create the office of Attorney for the State Board of Health and the Board of Health of the City and County of San Francisco.

[Approved March 31, 1891.]

SECTION 1. The office of Attorney for the State Board of Health and the Board of Health of the City and County of San Francisco is hereby created; such attorney shall be appointed by the Governor, and shall hold his office as such attorney for the term of four years, and until his successor is elected and qualified.

SEC. 2. It shall be the duty of such attorney to act for and represent the State Board of Health and the Board of Health of the City and County of San Francisco in all legal matters which may require their attention as such Boards of Health, and to especially represent and act for and in coöperation with said Boards of Health, when required by them, in the prevention of all acts and things which, in the judgment of said Boards of Health, or either of them, may have a tendency to be detrimental to the health of the people of the State; and in such other

matters pertaining to the health of the State in general and the duties of said Boards of Health, to assist and aid them with his advice, and to represent and act for them in court.

SEC. 3. The salary of such attorney shall be three thousand dollars per annum, and shall be paid out of the State Treasury, upon warrants drawn by the Controller, in the same manner as the salaries of other State officers are paid.

SEC. 4. All Acts and parts of Acts in conflict with this Act are hereby repealed.

SEC. 5. This Act shall take effect and be in force from and after its passage.

PENAL CODE.

PART I, TITLE IX, CHAPTER VII.

RELATIVE TO THE SMOKING OF OPIUM.

SEC. 307. Every person who opens and maintains, to be resorted to by other persons, any place where opium, or any of its preparations, is sold or given away, to be smoked at such place, and any person who at such place sells or gives away any opium, or its said preparation, to be there smoked or otherwise used, and every person who visits or resorts to any such place for the purpose of smoking opium, or its said preparations, is guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding five hundred dollars, or imprisonment in the county jail not exceeding six months, or by both such fine and imprisonment. [In effect March 4, 1881.]

PART I, TITLE X.

OF CRIMES AGAINST THE PUBLIC HEALTH.

SECTION 370. Public nuisance defined.

371. Unequal damage.

372. Maintaining a nuisance a misdemeanor.

373. Establishing or keeping pesthouses within cities, towns, etc.

374. Putting dead animals in streets, rivers, etc.

376. Violation of quarantine laws by masters of vessels.

377. Willful violation of health laws.

378. Neglecting to perform duties under health law.

380. Apothecary omitting to label drugs, or labeling them wrongfully, etc.

382. Adulterating food, drugs, liquors, etc.

383. Disposing of tainted food, etc.

394. Exposing person infected with any contagious disease in a public place.

400. Using or exposing animal with glanders

401. Animal having glanders to be killed.

402. Adulterating candy.

SEC. 370. Anything which is injurious to health, or is indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, by an entire community or neighborhood, or by any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway, is a public nuisance. [In effect July 1, 1874.]

SEC. 371. An act which affects an entire community or neighborhood, or any considerable number of persons, as specified in the last section, is not less a nuisance because the extent of the annoyance or damage inflicted upon individuals is unequal. [In effect July 1, 1874.]

SEC. 372. Every person who maintains or commits any public nuisance, the punishment for which is not otherwise prescribed, or who willfully omits to perform any legal duty relating to the removal of a public nuisance, is guilty of a misdemeanor.

SEC. 373. Every person who establishes or keeps, or causes to be established or kept, within the limits of any city, town, or village, any pesthouse, hospital, or place for persons affected with contagious or infectious diseases, is guilty of a misdemeanor.

SEC. 374. Every person who puts the carcass of any dead animal, or the offal from any slaughter-pen, corral, or butcher shop, into any river, creek, pond, reservoir, stream, alley, public highway, or road in common use, or who attempts to destroy the same by fire within one fourth of a mile of any city, town, or village, and every person who puts the carcass of any dead animal, or any offal of any kind, in or upon the borders of any stream, pond, lake, or reservoir, from which water is drawn for the supply of the inhabitants of any city, city and county, or any town, in this State, so that the drainage from such carcass or offal may be taken up by or in such stream, pond, lake, or reservoir, or who allows the carcass of any dead animal, or any offal of any kind, to remain in or upon the borders of any such stream, pond, lake, or reservoir, within the boundaries of any lands owned or occupied by him, or who keeps any horses, mules, cattle, swine, sheep, or live stock of any kind, penned, corralled, or housed on, over, or on the borders of any such stream, pond, lake, or reservoir, so that the waters thereof shall become polluted by reason thereof, is guilty of a misdemeanor, and upon conviction thereof shall be punished as prescribed in section three hundred and seventy-seven of this Code. [In effect March 23, 1876.]

SEC. 376. Every master of a vessel subject to quarantine or visitation by the quarantine officer, arriving in the port of San Francisco, who refuses or omits—

1. To proceed with and anchor his vessel at the place assigned for quarantine, at the time of his arrival; or,

2. To submit his vessel, cargo, and passengers to the examination of the quarantine officer, and to furnish all necessary information to enable that officer to determine to what length of quarantine and other regulations they ought, respectively, to be subject; or,

3. To remain with his vessel at the quarantine during the period assigned for her quarantine, and while at quarantine to comply with the regulations prescribed by law, and with such as any of the officers of health, by virtue of authority given them by law, shall prescribe in relation to his vessel, his cargo, himself, his passengers, or crew—

Is punishable by imprisonment in the county jail not exceeding one year, or by fine not exceeding two thousand dollars, or both. [In effect March 9, 1878.]

SEC. 377. Every person who is charged with a duty relating to the registration of deaths, under chapter three, title seven, of the Act to establish a Political Code, approved March twelfth, eighteen hundred and seventy-two, who—

1. Willfully fails to keep a registry of the name, age, residence, and time of death of a decedent; or,

2. Willfully fails to register with the County Recorder a certified copy of such register, as is provided for in said chapter; or,

3. Willfully inter, cremates, or otherwise disposes of any human body, in any city, county, or city and county, without having first obtained a permit, as provided for in said chapter; or,

4. Willfully grants a permit for the interment, cremation, or disposition of a dead human body, without the certificate provided for in said chapter; or,

5. Willfully violates any of the laws of this State relating to the preservation of the public health—

Is guilty of a misdemeanor, and is, unless a different punishment for such violation is prescribed by this Code, punishable by imprisonment in the county jail not exceeding one year, or by fine not exceeding one thousand dollars, or by both such fine and imprisonment. [Approved February, 1889.]

SEC. 378. Every person charged with the performance of any duty under the laws of this State relating to the preservation of the public health, who willfully neglects or refuses to perform the same, is guilty of a misdemeanor.

SEC. 380. Every apothecary, druggist, or person carrying on business as a dealer in drugs or medicines, or person employed as clerk or salesman by such person, who, in putting up any drugs or medicines, or making up any prescription, or filling any order for drugs or medicines, willfully, negligently, or ignorantly omits to label the same, or puts an untrue label, stamp, or other designation of contents, upon any box, bottle, or other package containing any drugs or medicines, or substi-

tutes a different article for any prescribed or ordered, or puts up a greater or less quantity of any article than that prescribed or ordered, or otherwise deviates from the terms of the prescription or order which he undertakes to follow, in consequence of which human life or health is endangered, is guilty of a misdemeanor, or if death ensues, is guilty of a felony.

SEC. 382. Every person who adulterates or dilutes any article of food, drink, drug, medicine, spirituous or malt liquor, or wine, or any article useful in compounding them, with a fraudulent intent to offer the same, or cause or permit it to be offered for sale as unadulterated or undiluted, and every person who fraudulently sells, or keeps, or offers for sale the same as unadulterated or undiluted, is guilty of a misdemeanor.

SEC. 383. Every person who knowingly sells, or keeps, or offers for sale, or otherwise disposes of any article of food, drink, drug, or medicine, knowing that the same has become tainted, decayed, spoiled, or otherwise unwholesome or unfit to be eaten or drank, with intent to permit the same to be eaten or drank, is guilty of a misdemeanor.

SEC. 394. Every person who willfully exposes himself, or another, afflicted with any contagious or infectious disease, in any public place or thoroughfare, except in his necessary removal in a manner the least dangerous to the public health, is guilty of a misdemeanor.

SEC. 400. Any person, persons, company, or corporation, who shall bring, or cause to be brought, or aid in bringing into this State any sheep, hog, horse, or cattle of any kind, or any domestic animals of any kind, knowing the same to be affected with any contagious or infectious diseases, shall be guilty of a misdemeanor. [As amended and approved March 19, 1889.]

SEC. 401. Every person who adulterates candy, by using in its manufacture terra alba, or any other deleterious substance or substances, or who sells, or keeps for sale, any candy or candies adulterated with terra alba, or any other deleterious substance or substances, is guilty of a misdemeanor. [In effect March 16, 1878.]

SEC. 402. Every animal having glanders or farcy shall at once be deprived of life by the owner or person having charge thereof, upon discovery or knowledge of its condition; and any such owner or person omitting or refusing to comply with the provisions of this section shall be guilty of a misdemeanor. [In effect April 16, 1880.]

OTHER PENAL STATUTES.

CHAPTER CXCV.

An Act to encourage the production and sale of pure and wholesome milk, and to prohibit and punish the production or sale of unwholesome or adulterated milk.

[Approved March 12, 1870.]

SECTION 1. It shall be unlawful for any person or persons to sell, exchange, or distribute, or expose for sale, exchange, or distribution, any impure, adulterated, or unwholesome milk; or to adulterate any milk for the purpose of offering the same for sale, exchange, or distribution; or to keep any cows for the production of milk for market, sale, exchange, or distribution, in a crowded and unhealthy condition; or to feed the same on any food which would produce impure, diseased, or unwholesome milk; and every person or persons who shall engage in or carry on the sale, exchange, distribution, or any traffic in milk, shall have the cans in which the milk is exposed for sale, exchange, or distribution, and the vehicle from which the same is vended, exchanged, or distributed, conspicuously marked with his or their names; also indicating by said mark the locality from whence said milk is obtained or produced, and any sale, distribution, or exchange of any milk in cans or by a vehicle so marked as to convey the idea that said milk was produced from a different locality than it really was, shall be and is hereby forbidden.

SEC. 2. Any person violating any of the provisions of this Act shall be deemed guilty of a misdemeanor, and be punished by a fine not less than one hundred dollars for the first offense, and double such amount for each subsequent offense, and by imprisonment according to law, if such fine be not paid. One half of such fine shall be paid to the informer or prosecuting witness, and the other half to the School Fund of the county. And any person may be compelled to testify concerning violations of this Act; but such testimony shall not be used against such witness in any criminal prosecution.

SEC. 3. The Health Officer and Health Inspectors of the City and County of San Francisco shall inform against and diligently prosecute all persons violating the provisions of this Act.

SEC. 4. This Act shall take effect immediately after its passage.

CHAPTER CCCCXCVI.

An Act concerning lodging houses and sleeping apartments.

[In effect April 3, 1876.]

SECTION 1. Every person who owns, leases, lets, or hires to any person or persons, any room or apartment in any building, house, or other

structure, within the limits of any incorporated city, or city and county, within the State of California, for the purpose of a lodging or sleeping apartment, which room or apartment contains less than five hundred cubic feet of space, in the clear, for each person so occupying such room or apartment, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be punished by a fine of not less than fifty dollars or more than five hundred dollars, or by imprisonment in the county jail, or by both such fine and imprisonment.

SEC. 2. Any person or persons found sleeping or lodging, or who hires for the purpose of sleeping in or lodging in any room or apartment which contains less than five hundred cubic feet of space, in the clear, for each person so occupying such room or apartment, shall be deemed guilty of a misdemeanor, and shall, upon conviction, be punished by a fine of not less than ten or more than fifty dollars, or by both such fine and imprisonment.

SEC. 3. It shall be the duty of the Chief of Police, or such other person to whom the police powers of the city are delegated, to detail a competent and qualified officer or officers of the regular force to examine into any violation of any of the provisions of this Act, and to arrest any person guilty of any such violation.

SEC. 4. The provisions of this Act shall not be construed to apply to hospitals, jails, prisons, insane asylums, or other public institutions.

SEC. 5. All Acts or parts of Acts in conflict with the provisions of this Act are hereby repealed.

CHAPTER CLXXXIX.

An Act to regulate the sale of certain poisonous substances.

[Approved April 16, 1880.]

SECTION 1. It shall be unlawful for any person to retail any of the substances poisonous, and by reason thereof dangerous to human life, without distinctly labeling the bottle, box, vessel, or package, and the wrapper or cover thereof in which such substance is contained, with the common or usual name thereof, together with the word "poison," and the name and place of business of the seller. Nor shall it be lawful for any person to retail any of the substances enumerated in either of said schedules to any person, unless, on due inquiry, it is found that the person receiving the same is aware of its poisonous character, and that it is to be used for a legitimate purpose.

SEC. 2. It shall be unlawful for any person to retail any of the substances enumerated herein, unless, before delivering the same, such

person shall make or cause to be made, in a book kept for that purpose only, an entry stating the date of the sale, the name and address of the purchaser, the name and quality of the substance sold, the purpose for which it is stated by the purchaser to be required, and the name of the dispenser. The book required by this Act shall be always open to inspection by the proper authorities. It shall also be the duty of the person dispensing any of the substances enumerated in either of said schedules to ascertain, by due inquiry, whether the name and address given by the person receiving the same are his true name and address, and for that purpose may require such person to be identified.

SEC. 3. Any person who shall dispense any of the substances enumerated in either of said schedules without complying with the regulations herein prescribed, shall, for every such offense, be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine not exceeding five hundred dollars, or by imprisonment in the county jail not exceeding six months, or by both such fine and imprisonment; *provided*, that nothing in this Act shall be so construed as to apply to the prescriptions of any physician authorized to practice medicine under the laws of this State.

SCHEDULE "A."

Arsenic, corrosive sublimate, hydrocyanic acid, cyanite of potassium, strychnia, essential oil of bitter almonds, opium, aconite, belladonna, conium, nux vomica, henbane, tansy, savin, ergot, cotton root, digitalis, chloroform, chloral hydrate, and all preparations, compounds, salts, extracts, or tinctures of such substances, except preparations of opium containing less than two grains to the fluid ounce.

SCHEDULE "B."

White precipitate, red precipitate, red and green iodides of mercury, colchicum, cantharides, oxalic acid, croton oil, sulphate of zinc, sugar of lead, carbolic acid, sulphuric acid, muriatic acid, nitric acid, phosphorus, and all preparations, compounds, salts, extracts, or tinctures of such substances.

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